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Judging Emotions From Facial Expressions

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I

HISTORICAL INTRODUCTION

A. EARLY HISTORY OF PHYSIOGNOMY

The vocabularies, phraseologies, and adages, the artistic, belletristic, and pseudo-scientific productions of all nations and ages contain almost innumerable references to conclusions drawn from an individual's facial expression as to his emotional state, intellectual endowment, and ethical qualities. Anthropomorphized deity, made to combine the ideal perfections of all desirable human properties, is credited in practically all religious systems with an unlimited capacity to read the thoughts and emotions of man like in an open book. In the day dreams of mankind, in the fantasy life of many persons, in the quack utilization of the unsatisfied and not really satisfiable wishes of an untutored laity, in the autistic schizophrenic delusions removed from the need of any checking consideration of actual possibilities, the idea of mind-reading has always been one of the consorts of the equally mythologic "phenomena" of telepathy, spiritualism, horoscope prophecies, and fortune telling. It is, therefore, in no way surprising that the earliest books which treat of physiognomy or "metoposcopy," with the exception of the more original and also more objective Aristotelian (or pseudo-Aristotelian?) treatise, were mostly made up of absurd concoctions of superstitious credulity, folkloristic notions, more or less far-fetched quotations from the Bible and the classical writers, pompously styled trivialities, a great deal of plagiarism, and now and then an occasional factual observation thrown in for good measure. They must have had a great appeal to the reading public, for some of them (*De chiromantiae principiis et physiognomiae*, by Alexander Achillinus; *Physiognomia*, by Michael Scotus; *Introductiones apotelesmaticae in physiognomiam*, by Joannes ab Indagine; *Anastasis chiromantiae et physiognomiae*,

"*de pluribus et pene infinitis autoribus*," by Bartholomaeus Cocles; *Fisionomia naturale*, by Girolamo Ingegneri) enjoyed extreme popularity necessitating an enviable number of editions and translations during the sixteenth and seventeenth centuries. A perusal of Laehr's unsurpassed annotated bibliography of psychiatry, neurology, and psychology, covering the first 350 years of the printing era, and of Mantegazza's entertaining historical sketch give one a vivid picture of the constant demand for these usually bombastic, often insipid, casually anecdotal "best sellers" of the Middle Ages and of their absolute lack of any informative value or scientific responsibility.

The works of Giovanni Battista dalla Porta mark a definite departure from empty medieval verbosity. The title of one of his books, published 1623 in Padua, contains his program: "Of celestial physiognomy: six books in which the falsehood of judicial astronomy is established, and wherein the way by which one may recognize in natural causes all that the aspect, the appearance, and the features of man can physically signify and announce, is put forth." Yet his physiognomic encyclopedia is little more than a medley of personal experiences, opinions and interpretations, with a potpourri of numerous literary interpolations. His writings served for more than one hundred and fifty years as the "standard text books" on the subject, until they were replaced by that well-known "classic of physiognomy," the *Physiognomical Bible*, the first edition of which appeared in 1772 and the author of which was the Swiss theologian, artist, and—above all—enthusiastic poet, Johann Caspar Lavater.

Though Lavater spoke of physiognomy "as capable of becoming a science as any of the sciences, mathematics excepted," his work shows very little evidence of rational systematic organization; it is built up on guesses, generalizations derived from sometimes very excellent, at other times erroneous observations, and on the overflowing sentiments of a loving, pious, and all-admiring minister of the Gospel. He distinguished "physiognomy," which he defined as observation of a character in the state of tranquillity, from "pathognomy," or the study of a character in action, and found that practically all people read the countenance pathog-

nomonically. He ascribed to man special "physiognomonical sensations," consisting of "those feelings which are produced at beholding certain countenances, and the conjectures conveying the qualities of the mind, which are produced by the state of such countenances, or of their portraits drawn or painted."

Says Mantegazza: "Lavater was the apostle of scientific physiognomy, and although Lichtenberg wrote against him the celebrated satire of the Physiognomy of Tails, he will always remain one of the most sympathetic figures, the most beloved, the most brilliant in the history of physiological sciences."

B. RECENT STUDIES OF FACIAL EXPRESSION

1. *Artistic Approach*

Since Lebrun, the celebrated painter of Louis Quatorze, undertook to devote a special volume to the "expression of the different characters of the passions," many artists have written on the subject more or less realistically, and to-day every modern text book of anatomy for artists contains practical suggestions to the student regarding the relations between the configuration of the face and certain emotions.

2. *Phylogenetic and Anatomical Studies*

Camper, the famous discoverer of the "facial angle" named after him, wrote a treatise, published posthumously in 1791, on the means of representing the different emotions. Here for the first time anatomical considerations were brought forth in a comparative study of human countenances in various races. Charles Bell, in 1806, gave with his "Anatomy and Philosophy of Expression," the first really objective and scientific presentation of the subject. There he stated that in all the exhilarating emotions the eyebrows, eyelids, the nostrils and the angles of the mouth are raised, while in the depressing passions the reverse is true. He also came to the conclusion that the facial muscles are thrown into the activity of the emotional expression through the interplay of respiratory and circulatory functions. In spite of these, and other attempts, Johannes Müller, in his "Physiologie des Menschen," summed up the situation as he

saw it in the middle of the nineteenth century, with these more than skeptical words: "Die Beziehungen der Gesichtsmuskeln zu besonderen Leidenschaften sind gänzlich unbekannt."

Exactly one hundred years after the publication of the first edition of Lavater's work, in 1872, Darwin fulfilled the Swiss author's dream by making physiognomy accessible to scientific approach through his epoch making book, "The Expression of the Emotions in Man and Animals." According to Darwin, emotional expressions are survivals of movements that were once useful to the animal series, when in the presence of conditions which excited the emotion: Principle of serviceable associated habits. When a directly opposite state of mind is induced, there is a strong and involuntary tendency to the performance of movements of a directly opposite nature, though these are of no use: Principle of antithesis. Certain emotional expressions are to be regarded as mere overflows of nervous energy over any path that may chance to be open: Principle of direct nervous discharge.

Though different attitudes were taken in the course of time by various investigators with regard to Darwin's theoretical conclusions, it is conceded by all that his practical observations of animals, of children and of adults are as removed from most previous attempts as is astronomy from astrology or chemistry from alchemy, and that they have formed a solid and useful basis for further research. The phylogenetic and comparative anatomical approach was followed by Ruge, Popowsky, Hans Virchow, and more recently by Gregory and by Huber.

3. Use of the Electric Current

Duchenne de Boulogne, in 1862, made known the results of faradic stimulation of the face of an elderly man who had lost pain sensibility in the stimulated part. He felt that each emotion had its typical expression brought about by the activity of one or at most a few facial muscles. Thus he declared that the frontalis was the muscle of attention, the corrugator supercilii of pain, the pyramidalis nasi of aggression, the transversalis nasi of lasciviousness, etc. This method had, of course, the disadvantage of comparing meaningless grimaces of artificial origin

and devoid of any purpose with the situationally determined and socially purposeful expressions of genuine emotions.

4. *The Use of Composite Figures*

Piderit, in a monograph published in 1867, attempted to help painters and sculptors in their efforts to represent human emotions by endeavoring "einen beliebigen verlangten Gesichtsausdruck gleichsam mit mathematischer Bestimmtheit zu construiren." His "geometry of expression" is attained by an interchange of a number of mouths, eyes, brows, and noses, with the aid of which he obtained a wide range of facial expressions. In recent years, Boring and Titchener have worked with the Piderit models, not by way of the plastic heads which he himself had suggested, but more simply by way of an "articulated" profile. The Piderit faces were also used by Buzby, who submitted the faces representing anger, dismay, horror, disdain, disgust, and bewilderment to 716 students in the graduate and undergraduate schools of the University of Pennsylvania; and by Jarden and Fernberger.

5. *The Use of Photographs*

Darwin was the first to use photographs with the aim of testing the ability of people to judge facial expressions. Since so many articles within the last sixteen years have occupied themselves with the same problem and the present presentation also deals with this topic to a very large extent, it is of interest to quote Darwin's report literally: "Dr. Duchenne has given a photograph of an old man with his eyebrows well elevated and arched by the galvanization of the frontal muscle, and with his mouth voluntarily opened. This figure expresses surprise with much truth. I showed it to twenty-four persons without a word of explanation, and one alone did not at all understand what was intended. A second person answered terror, which is not far wrong; some of the others, however, added to the words surprise or astonishment, the epithets horrified, woful, painful, or disgusted." He also showed one of the Duchenne portraits intended as an expression of horror, with the result that 20 persons said

fright or horror, three said pain, and one declared it to be a picture of extreme discomfort.

This mode of approach, indicated by Darwin on the two cited occasions only, was not taken up again until 1914, when Antoinette Feleky introduced the method in a brief article published in the *Psychological Review*. It was followed by further papers and, in 1924, by her book on "Feelings and Emotions." There she reproduced several hundred pictures of the same person (herself) taken at different times during the period of one year. As she posed for each photograph, she had clearly in mind what she was endeavoring to portray, "either by deliberately calling up the emotion itself, or by reciting words expressing the desired emotion." The pictures were shown to one hundred "reliable persons," who were also given a "fairly complete" list of 110 names of emotions with the instruction to read through quickly the list of words "in order to refresh your memory with the names of the different expressions," to observe each photograph carefully and to write down the term of the expression which the picture suggests to the subject. The results gave her "means of deciding how far certain defined facial expressions are interpreted each as the sign of a given emotion or complex of emotions; and in cases where the facial expressions are clearly significant, means of studying emotional expressions and illustrating them before classes in psychology or dramatic art."

The method of presenting photographs was used to a large extent during the last decade. Langfeld and Allport employed the pictures illustrated in Rudolph's book, "*Der Ausdruck der Gemütsbewegungen des Menschen*." Ruckmick, Landis, Dunlap, and Moss preferred portraits which were taken in their own laboratories, Gates availed herself of Ruckmick's set of photographs. Sherman, finally, demonstrated motion pictures.

6. *Study of the Subjects' Methods Used in Judging Emotional Expressions and Photographs.*

Ruckmick, in a special study, showed pictures of emotional facial expressions to a number of persons with the following instructions: "You will be shown the photograph of a face.

Please note first what meaning you read into the face, and second, any change in your own affective reaction as a result of viewing the picture." He obtained the following results: Some subjects visualized the entire person and ideationally integrated the position of the hands, posture of the body, and occasionally relevant objects about the room. Others could hear the words spoken. Some called up memory pictures from their own experiences. A fourth group, finally, took the portraits quite passively as pictures without going interpretatively behind them. It may be of interest, in this connection, to quote the following passage from Edgar Allan Poe's, "The Purloined Letter": "When I wish to find out how wise, or how stupid, or how good, or how wicked is anyone, or what are his thoughts at the moment, I fashion the expression of my face as accurately as possible in accordance with the expression of his face, and then wait to see what thoughts or sentiments arise in my mind or heart, as if to match or correspond with the expression."

Langfeld made a study similar to that reported by Ruckmick. The question put to the subject was: "Describe as fully as possible the manner in which you judged the facial expression. He found that the empathic response or sympathetic imitation of the facial expression in the picture was the method almost invariably adopted. There was frequent reference to kinaesthetic sensations of imitations in the observer's own face. Five subjects had to imagine an entire situation which would involve responses of the whole organism. At times the observer consciously imagined himself in the scene. Occasionally, an association was formed between the picture and some well-known painting expressing definite emotions, or else situations which had actually occurred in the subject's experience were recalled. Only one observer denied any active participation. A few mentioned that they got their clue from certain features to the exclusion of others.

7. Study of Age and Sex Differences with Reference to the Judgment of Facial Expressions

Georgina S. Gates, in an examination of 902 school children, varying in age from three to fourteen years and in achievement

from kindergarten to eighth grade, and 86 college students, came to the conclusion that the ability to interpret pictures of emotional expressions increases with age and grade at a fairly uniform rate. In showing several Feleky photographs to a number of children at the Baltimore Juvenile Court, I gained the impression that there was, in all ages, a much greater ease and correctness in giving the situation which might have given rise to the pictured attitude than in finding the adequate term for the emotion; if one compares adults and children, one should be careful to consider the latter's difficulty to speak in abstract words.

Fernberger found that the results of his investigations were equally true for both sexes (and for all degrees of psychological sophistication). Allport also reports that there is no pronounced difference between the sexes in this capacity, except that the women made their judgments in about one-half the time needed by the men. Guilford found no sex differences in original ability, in variation of ability, in degree of improvement, in advantage of a longer exposure over a shorter one, nor in improvement during either a longer or shorter exposure period.

8. Study of the Ability to Judge the Emotional Responses in Infants

Sherman demonstrated that both trained and untrained observers could not "correctly name" the emotional reaction of a very young infant either from direct observation or from motion pictures. The situations employed were hunger, restraint, dropping, and sticking with a needle. "Unless the situation is recognized, the reaction cannot be properly labeled, and when the situation is known, there still remains a certain amount of difference of opinion as to the proper label to the behavior."

9. Examination of the Ability to Learn to Judge Facial Expressions

Darwin stated that we have the instinctive power of recognizing expressions. Lemoine argued that man does not possess any innate knowledge of them. Langfeld concluded that certain emotions could be judged successfully from pictures. Fernberger felt that "little can be determined of an emotional state in

another individual from the perception of an abstracted facial expression completely divorced from a general, total stimulus situation."

Allport is of the opinion that the proficiency of different individuals in this regard is not due to the innate reaction to expression, but to the amount of training or effort at learning which they have experienced. The question arose whether and to what extent suggestion and practice might influence the ability of judgment. Jarden and Fernberger, using six Piderit models, gave two modes of suggestions: (a) The faces were correctly named and the subjects asked to judge regarding the adequacy of the facial expression, using the terms poor, good, fair. (b) The expression was analyzed and named and the face was built up before the subjects on the basis of this analysis. They found that suggestion increases the percentage of correct judgment materially. Langfeld told the observer, after judging the expression, the artist's title of the picture, or an incorrect title, and asked whether he agreed with it. Some of the incorrect titles were as opposed as possible to the correct term, others were rather similar. His experiment suffers from the small number of subjects examined. The book title was approved in 73 per cent, the wrong title in 41 per cent of cases.

Allport has found that the ability to judge emotional expressions improves slightly with but fifteen minutes of training in the analysis of faces. Guilford, in a special study, came to the conclusion that with subjects, who were given training through a period of ten days with a test every other day, the average gain was 51 per cent over the original ability. Practice tended to equalize the capacity of the various observers; the less efficient gained the most, and the most efficient gained the least. Allport's three best judges in the original test actually lost after training, in direct proportion to their ability.

10. *Judgment of Facial Expressions as Indicator of "Social Intelligence"*

Fred C. Moss and Thelma Hunt have been working for several years on a "statistical analysis of 5,000 tests given in industry,

and 10,000 tests given in educational institutions with the aim of determining the validity of the various items in the social intelligence test, with the ultimate aim of constructing a more valuable device for measuring ability to get along with others" (under a grant from the Social Science Research Council). The examination, prepared by Moss, Hunt, Omwake, and Ronning, consists of six tests, the third of which calls for "recognition of mental states from facial expressions"; a list of the names of the twelve emotions is given together with the pictures. (The other tests intend to examine judgment in social situations, memory for names and faces, observations of human behavior, social information, and recognition of the mental state of the speaker.) The portrayed emotions are: Coquetry, despair, determination, disgust, horror, physical suffering, rage, scorn, sulkiness, surprise, suspicion, terror.

11. *Attempts at Measuring Ability to Judge Emotional Expressions*

Surprisingly few of the investigators have gone beyond the evaluation of the subjects' answers as either "correct" or "incorrect." In most cases, if the term used by the observer coincided exactly with the term given by the person posing for the picture, the return was considered satisfactory, but if any other name was offered for the emotion, the result was recorded as displaying a lack of proper identification. Thus, it made no difference if "fear" was recognized as "horror" or as "joy"; in both instances the reply was rated as "incorrect." Such a procedure does, of course, little justice to the purpose of any such examination.

Allport was the first to work out a method of determining greater accuracy. He called it the "facial expression test." Fourteen of the Rudolph pictures were shown as lantern slides to various classes of students. Each subject was given a sheet containing fourteen groups of names of expressions. Each of these groups comprised eight titles, some approximating that of the corresponding photograph, but only one absolutely correct. The task required was to underline the expression in each group

which best suited the corresponding portrait. Partial credits were given for the approximate names. A perfect score—that is, correct titles chosen for all fourteen pictures—was considered as 100 per cent. The average scores attained by various groups of subjects ranged between 45 and 50 per cent. Guilford has also used certain criteria for grading the subjects' returns. In scoring, one point was granted each judgment if it belonged to the correct group of emotional reactions; one point additional for the correct members of that group; and one point each for every correct qualifying adjective.

12. *Extension of the Problem*

A number of investigators has gone much further than to study emotional reactions from the expression of the face. Pintner and Anderson examined the estimation of intelligence from photographs. Dunlap, in 1927, published a "project for investigating the facial signs of personality." He speaks of the possibility that there may be facial indications of something that may be called character or personality. He suggests a study of facial "lines" of persons, particularly while they are speaking, laughing or otherwise acting so that the face moves. He feels that each individual has a "fixed pattern," that the lines of this pattern most often do not appear at once, and that the facial patterns tend to fall into certain types of limited number. He suggests for the topic the name "idioscopy."

II. MODE OF PROCEDURE

In the course of Dr. Meyer's lectures on psychobiology to first year medical students of the Johns Hopkins University and in connection with the discussion of the topic of the emotions, a succession of ten, or twelve, or thirteen Feleky photographs, projected on a screen, was presented to six different classes. The students were to write down the name of the emotion which they thought was expressed in each picture, choosing the "best term" they could find which would do full justice to the type or shade of emotional reaction. A special column was provided for a brief description of the concrete situation which, in the observer's opinion, might in each instance have given rise to the interpreted expression.

1. *Problem of Submitting a List of Names of Emotions to the Subjects*

Practically all previous investigators handed to the observers a list of terms from which they were to select the most appropriate ones in their judgment of the photographs. Allport felt that "by the use of this method—that is, with names given to choose from—individual differences in the result stand as differences in ability to react to the expression, and not as differences in fluency or vocabulary." It is, however, apparent that the use of a list, though aiming to remove one seeming difficulty, easily creates a number of others. In dealing with first year medical students, one may expect that the terms contained in most of the enumerations (such as hate, scorn, fear, terror, interest, etc.) are an integrative part of their linguistic equipment and that words such as these would always be available without any reminder. But there are several more serious objections, which make it very likely that the use of any such table might be unwise and reduce the intrinsic value of the entire procedure:

a. It opens the door to additional possibilities of suggestion and, to a considerable extent, of a more or less guessed and, in

any event, anticipated correlation between a given series of portraits and another series of words, thus making it difficult to eliminate with certainty the element of a chance parallelization in the evaluation of the results. We obtain the outcome of an artificial word-picture relation rather than a spontaneous sizing up of the emotional reaction and situation.

b. Curtailing the individual's own "linguistic inventiveness" makes of the performance too much of a pure laboratory test.

c. The smaller the list (and the number of photographs), the easier is the correlation of words and pictures; the larger the number, the greater is the probability of errors. In other words, an observer who has the task of correlating ten pictures with a group of names would have an unfair advantage over one who had to work with twice as many photographs.

d. The presence of a term in the list does not exclude ignorance of its accepted meaning. (Feleky).

e. The lists made up by the various authors do not provide for combinations and explaining, or supplementary, or restricting adjectives.

For these reasons, after an unsatisfactory attempt with the use of a list, it was found best to abandon this method and to have the students depend on their own vocabularies. One can easily afford to do this if one does not assume only one term to be "correct" and all others essentially wrong.

2. *Discussion of the Feleky Photographs.*

It is unquestionably true that under usual circumstances one sees very much more than a facial expression. In nature, one is confronted with the whole situation and its entire reaction and its result. Lavater was right when he said that we read countenances "pathognomonically." Auguste Flach, in a very interesting essay, expresses the opinion that the essential characteristic of an expression is not contained in its symbolic form, but in its dynamic progression. But she also recognizes very aptly that, in judging a picture, it is the dynamic course, which provides a clue for its meaning, and not the picture itself. Dunlap differentiates between a "cross section of the expression," or the pattern rep-

resented by the muscles at a given moment, and the "actual expression," or the sequence of changes through which the expression pattern goes in a period of time.

Motion pictures of emotional reactions would come next to natural situations in giving a dynamic development of the performance. Such "movies" are, however, not available at the present time.

The Rudolph pictures are the only ones that present the entire body, all others portray the face alone. Frois-Wittmann gives this summary of the pictures most frequently used: "Piderit's pictures are theoretical, awkward and schematic. The Boring and Titchener model has the same defects. Rudolph's drawings, although lifelike, are awkward in the case of many of the expressions; also the hair, moustache and beard prevent the perception of the facial musculature. Feleky's pictures are too characterized: the face itself is an individually distinct face (a slight frown, a slight pout are present when in repose); the subject appears in various dresses, the head is seen in different positions, the hand is occasionally used as an expressive aid. Ruckmick's photographs are better standardized: the dress has been replaced by a black drapery, the face is nearer to the average, the hand has disappeared. The head, however, is still seen in various positions."

Eighteen photographs were presented in varying combinations. They will be listed in the order of their succession in the Feleky series: Shame (posed for the second line in Margaret's speech to Faust in the garden scene: "To shame me, sir, you stoop thus low."), breathless interest, interest, suspicion, agreeable surprise, pity ("Poor thing!"), determination, righteous anger, extreme horror (a child is being run over and ground to pieces by a car), physical suffering, fear approaching terror (posed for Juliet's scene: "What if it be a poison?"), hate, sympathy, despair ("What shall I do now?"), rage, disgust, sneering, and contempt. Some of the pictures were shown to one class only, others to several classes, and still others to all subjects analyzed.

The total number of students whose returns were examined amounted to 409. A certain small portion of the replies had to be eliminated for various reasons, prominent among which were

illegibility, judgments of foreign (Chinese, Japanese, South American) students with an inadequate knowledge of the English language and its subtleties, terms struck out with pencil or ink without being replaced by another name, the use of too many different and often conflicting alternatives, and near-sightedness on the part of several observers.

3. *The Column for Thoughts and Utterances*

In addition to the situation believed to be responsible for the facial expression on each photograph, four of the six classes were asked to note also the probable thought or utterance or exclamation of the portrayed person. In the study of the returns, these notes were considered together with the situational factor. They proved to be quite helpful in many cases where the setting was not given at all or where the meaning of the report was not quite clear. They also often were a useful supplement to the given name of the emotion.

4. *The Column for Characteristic Features*

Two classes were instructed to add to the judgment of the facial expression their opinion as to what they thought were the typical features of the photograph, which decided their interpretation. The results were very unsatisfactory in this respect that most of the students were very vague in their statements. The most frequent returns were, "Eyes" or "Mouth" or "Eyes and Mouth." A few of the observers made excellent analyses of the countenances. But in the whole one gains the impression that, in judging the facial expression of emotions, though the characteristic lines and wrinkles and folds and the width of the eyes and mouth, the length of the entire face, the position of the eyebrows, etc., undoubtedly play a highly decisive part in the sizing up of the reaction, only a small minority of people consciously and deliberately permits a systematic facial analysis to influence the judgment, as show indeed the results obtained by Ruckmick and Langfeld (and Feleky) in their quoted investigations into the introspection of persons interpreting facial expressions from photographs.

III. CRITERIA FOR THE EVALUATION OF THE RETURNS

Before attempting any evaluation of the students' returns, one must realize that no rigidly established criteria are, or can be, available. It is, therefore, not at all surprising that, with the exception of Allport's studies, so far no systematic plan has been worked out, which would make it possible to grade even approximately the ability to judge emotional expressions. One is immediately confronted with numerous difficulties offering themselves and with a great multiplicity of various factors involved in such an enterprise. The chief problems which one has to keep in mind as soon as one wishes to approach the task concern themselves with the degree of excellency of the presented photographs, with the proper evaluation of the "best terms" used by the subjects in characterizing the emotions portrayed in the pictures, together with qualifying adjectives, combinations, situational factors, probable thoughts and utterances of the photographed individual, and finally with the imagination, previous experiences and linguistic resources of each observer. It is quite evident that one will also have to consider carefully the terminology at our disposal. To accept one certain term as "correct" and all others as "incorrect," would mean to disregard entirely the richness of any of the modern languages which have in thousands of years developed a considerable fineness of shades, a wealth of locally, dialectically, historically, and oftentimes even individually determined nuances, a scale of numerous degrees of intensity and almost countless implications. This is particularly true of English, which can almost always choose among two etymologically related but sufficiently differentiated sources, its Germanic and Romanic components.

A. QUALITY OF THE PRESENTED PHOTOGRAPHS

The selection of some of the least doubtful of pictures of the Feleky series has done away to a certain extent with the question

of how closely a portrait really approaches the intended facial expression. Mrs. Feleky not only "portrayed" each expression sufficiently before a mirror prior to getting ready to accept a certain photograph as displaying to the observer a definite emotion, but she also tried to confirm the final results of her studies by having one hundred people tell her what they thought each picture represented. It is true that she made a far too liberal use of the term synonym, but one may say that in the eighteen pictures selected for our experiment a careful analysis of the features proves them to fall within the requirements set up by such reliable and experienced investigators as Darwin and Mantegazza. We shall, therefore, in our present study accept them as more or less typical representations of the intended emotions.

In the photograph representing breathless interest (Feleky series No. 9) the head is leaning slightly forward, the brows are somewhat raised, the eyes fairly wide open and clear, the lips are parted, but not completely released. The picture thus resembles quite closely that intended as the expression of agreeable surprise (No. 22), except that there the face in its entirety is more elongated due chiefly to a drop of the chin and lower lip. One will, therefore, in the grading of the students' responses, have to make proper allowance for this similarity of the two photographs and not reject "surprise" as an entirely faulty identification of the "breathless interest" picture. Allport justly remarks that "when a person's sensorial attention is absorbed by some object before his gaze his eyes are usually opened wide and his brows lifted suggesting horizontal wrinkles in the forehead," and that, "since being surprised or astonished always involves attention of this type, its expression becomes a component of the astonished face." Darwin also observed that the difference between the expressions of attention and surprise consists in the degree of the width of the mouth and the eyes. The photograph showing a milder form of interest (No. 15) has the eyes normally open, the brows slightly raised, the lips in balanced position, just opened enough to give one the impression of a normal inspiration.

Suspicion (No. 18) is characterized by eyes turning sidewise, knit brows overshadowing the eyes and giving rise to vertical

wrinkles of the forehead, and by set lips. The obliquity and side glance of the eyes distinguish this photograph from that posed for fear (No. 44), but a considerable number of Mrs. Feleky's judges did not recognize the difference and identified the portrait as expressing fear or dread. As a matter of fact, in summing up the judgments of her critics, she says of the picture: "We are justified in accepting this photograph as a representation of suspicion of a very high degree, say suspicion accompanied with fear." One has to bear this in mind in grading the students' responses. In the fear picture, on the other hand, the eyeballs are more uncovered and slightly protruded and seem to be fixed on a certain object. One also sees a strong contraction of the neck muscles. (Duchenne actually spoke of the platysma as the "muscle of fright.") The horror picture (No. 33) shows the eyes very wide open, so that the upper portion of the bulb above the iris becomes visible, the eyebrows are knit slightly, the nostrils dilated and the mouth is wide open. The neck muscles are here also noticeably contracted.

In righteous anger (No. 32), we have the eyebrows lowered at their inner ends and overshadowing the eyes, the lips are set, the upper lip is slightly raised. The picture of determination (No. 31) presents quite a few similar features, except that the frown is less pronounced and the lips more firmly closed, thus causing a more marked wrinkling under the lower lip and a greater tenseness of the jaw muscles. The rage photograph (No. 51) was interpreted by a large number of Mrs. Feleky's judges as representing horror. The expression certainly is much more than just an exaggeration and intensification of the features in anger. The glaring eyes, frowning forehead, and exposed teeth, which Darwin found typical of some forms of rage, are seen in the portrait. But it is chiefly the expression of the eyes that marks the best distinction between the representations of rage and horror. The clawed fingers do not help much towards a differentiation of the two emotions.

Hate (No. 47) is expressed by a slight withdrawal of the head, knit brows and narrowing of the palpebral angles, eversion of the lips, particularly the lower one, and contraction and

wrinkling of the nose. In disgust (No. 55), we have as distinctive features a drawing up and shortening of the nose, with both transverse and vertical wrinkles across its root and a dilatation of the nostrils due to the elevation of the alae. The mouth is in a somewhat oblique position, with eversion of the upper of the two labial angles. The eyes have a protective expression, caused partly by the set brows and partly by the slight elevation of the lower lids. Contempt (No. 62), "looking down" at the object, shows the eyes directed downward and half covered by the upper lids, the brows in normal position, the nose turned up slightly, due chiefly to an (invisible) contraction of the upper lip and a deepening of the naso-labial folds. The chin is slightly elevated. The photograph posed for sneering (No. 61) is a combination of the expression of contempt with mild laughter, with the eyes open a trifle wider and a slight retraction of the lips.

Physical suffering (No. 38) is represented by a half open mouth drawn somewhat to one side, with raised upper lip, eyes rather a little wide open. This picture has some obvious disadvantages, owing to the fact that it is covered partly by the hand supporting the head. It thus permits the view of one-half of the face only and does not show enough of the forehead or of the root of the nose to allow an observation of wrinkles. The face thus looks perhaps more balanced than it might otherwise appear. On the other hand, the supporting arm gives a good lead towards identification of the expression. In despair (No. 50) we see an expression of mental suffering, which differs from the preceding picture in details only. The eyes, especially the outer palpebral angles, are a little wider open, the face more drooping, the mouth closed with lips relaxed. The resemblance of the expressions of bodily and mental pain will have to be considered in the attempt at a fair evaluation of the judgments.

Of the picture of sympathy (No. 48), Mrs. Feleky says that it is a typical representation of this emotion, in spite of the fact that only fifteen judges named either sympathy or pity. She goes a little too far in her liberal evaluation if she feels that the judgment of those who give terms of dislike "brings in the social factor which gives us sympathy as the basis of dislike." The

photograph has something "bitter" about it, with the brows rather too tense and set and the deep naso-labial furrows running down almost to the lower edge of the mandible. The lips are slightly parted. Pity (No. 29) conveys the expression of compassion more readily, with more tenderness and an element of pleading.

Shame (No. 3), finally, shows a slightly retracted chin, mouth closed, with labial angles drawn out to the side, a pleading side glance of the eyes, and a well balanced countenance.

B. THE LINGUISTIC ASPECT OF THE EXPERIMENT

If one attempts to bring order into the 365 "best terms" used by the students in their interpretation of the eighteen Feleky photographs, one looks in vain for help from any of the existing groupings of the names of emotional reactions. The very fact that in Roget's Thesaurus four hundred and fifty out of one thousand topics refer to mentally integrated human functions demonstrates better than anything else the wide range of words one must expect if one does not wish to bind the observer in the linguistic strait-jacket of an especially prepared list of terms. The number obtained in our experiment is therefore not surprising. The main difficulty lies in the question of their proper evaluation in the grading of the returns: Can the words be grouped so that their classification might be of assistance in the estimation of the degree of the students' identifications of emotional expressions?

1. *Classification of the Emotions*

Pillsbury feels that "the outcome of all historical attempts at classification is disappointment." Jastrow goes even further than that, when he states that "the fusion of emotions sets a proper limit to the rigidity and profit of classification."

A mere bipartition would do little justice to our purpose of moving 365 terms into a scheme of more or less distinctive groups, thus permitting to narrow down as much as possible the probabilities of subjective guessing and confusion and uncertainty, at the same time giving due consideration to the relative similarity of the expressions of some emotions which one would be inclined to place in different categories.

The division of the "passions" into those in which pleasure predominates (love, courage, benevolence), and those in which pain predominates and which are by far the most numerous (rage, hate, fear, pity, indignation, envy, shame, jealousy), reaches back to Aristotle and has up to the present time played a very important part in the discussion of emotional reactions. An attempt to use this principle for our plans proved, however, to be entirely unsatisfactory, even after the exclusion of the so-called intellectual feelings and attitudinal states and undifferentiated emotions. Let anyone try to take the available terms and separate them according to their hedonic qualities, and the doubts and uncertainties and difficulties will immediately become evident. Is pity really to be placed definitely and unrestrictedly among the painful emotions? What about Pagliacci's laughter? Is fascination pleasant or unpleasant? Or pride? Or coyness? The dilemma becomes, of course, insurmountable if, as we are forced to do in our investigation, one has to take in all of the 365 names regardless of whether they are "emotions" or "feelings," or "instincts," or "sentiments," or "moods," or "attitudes." What we desire to evaluate is, after all, not the academic problem of the correct psychological labeling of the terms, but the very concrete and practically and objectively demonstrable effect which certain features exercise upon those who observe them and the question as to how a number of observers may differ in their reactions to what they see in those countenances.

For the same reason, if for no other, we must refrain from working with the concepts of primary (or elementary) and secondary (or combined, or derived) emotions. A historical review convinces one very soon of the discrepancies and arbitrariness of such a classification. Descartes has six primary emotions (admiration, love, hate, desire, joy, sadness), Spinoza has only three (joy, sadness, desire). In recent time, Jørgensen gives as the six "elements to be considered as fundamental" fear, happiness, sorrow, want, anger, shyness. Watson, the rigid behaviorist, speaks of fear, rage, and love as the three primary emotions! Mehran K. Thomson, in a lengthy list, enumerates dozens of "compound emotions" and analyzes them into what he believes

to be their chief components; just why the ones are compounds and the others components, is not quite clearly explained, and the many bracketed question marks adorning the list are most assuredly not out of place and certainly not too numerous. Shand has, for a change, seven primary emotions: Fear, anger, joy, sorrow, curiosity, repugnance, and disgust. One will heartily agree with his habit of capitalizing their names, for we have in his book a splendid example of dealing with fictitious entities almost to the point of personification, reminding one in many places rather vividly and forcibly of the manner in which cabbalistic literature deals with the personified properties of the Deity.

McDougall's scheme is well known. He has six primary emotions as preparation reactions, consisting of fear, disgust, wonder, anger, subjection, elation, and tenderness, with the related instincts or end reactions of flight, repulsion, curiosity, pugnacity, self-abasement, self-assertion, and parental care.

McCosh finds four elements in every emotion: appetences, ideas, excitement (with attachment or repugnance), and organic affection.

Allport's classification would be much more useful. He says: "In their various combinations and degrees the manifest expressions run well into the hundreds. We can, however, reduce this facial vocabulary to six elementary roots, represented by the following groups: pain—grief, surprise—fear, anger, disgust, pleasure, and various attitudes. The first four are unpleasantly toned, the sixth is neutral." This grouping, separating the emotions according to their expressive qualities, could very well be enlarged sufficiently to permit one to place properly most of the 365 terms at our disposal. It does not, however, provide for a consideration of the many interrelations existing between the various groups. This is also the chief objection, at least for our present purposes, to another, otherwise excellent, classification, namely, that given by Stratton. Stratton starts with excitement as undifferentiated emotion (either standing alone, or as the precursor, or as the successor of other emotions), branching off into elation and affection or that side of the tree reserved for pleasantly toned reactions, and depression, fear, and anger on the other side.

Warren's list of the "more important human emotions" works with a correlation between "basis" or "instinct" on one hand and "emotion" on the other, and divides them into expressive (nutritive), reproductive, defensive, aggressive, social ones, and those with temporal projection. Since, under these circumstances, one finds love and jealousy in the same group, or joy and grief, or affection and detestation, it is obvious that this classification cannot be used in the evaluation of the judgment of facial expressions.

The distinction between objective (love, hate) and subjective (joy, sorrow), or between retrospective (satisfaction, regret) and prospective (hope, dread, anxiety) terms is equally unsatisfactory and unable to supply the desired room for all of the students' returns. Nor can one make full use of the table given by Yerkes, who has a scale of moods, weak emotions, strong emotions, and passions, though his plan helps one considerably in the attempt at building up a ladder from the weakest to the strongest term within the individual groups. Külpe, finally, has worked out a sort of tridimensional scheme, in which the hedonic tone, activity or passivity, and diffusion (mood) or topical content and direction are taken into consideration.

Not being able to find a classification liberal and broad enough to serve our well defined and circumscribed aims, the writer had to examine the terms which he found in the students' returns as depicting in what the observers thought the best possible manner the reactions suggested by the presented photographs. It immediately became quite clear that, just as everywhere else where one deals with an immense variety of more or less complicated human functions, any attempts at dichotomous simplification is apt to confuse the issue rather than to clarify it. Not less important in any such task is the realization, which must particularly be emphasized in an era of speculative creations of more or less mystical, more or less anthropomorphized driving or correcting or criticizing "forces" (such as the *élan vital*, or *entelechy*, or the psychoanalytic Trinity of *id*, *ego*, and *superego*, etc.), that the names of emotional expressions, emotional attitudes, emotional reactions in general are not names for any existing entities.

However trivial and self-evident this may sound, it has been, and still is being, sinned against *intra muros et extra* in even the most recent psychological literature. It is true enough that the structure of our language, compelling one to mix concrete and abstract terms incessantly, plays havoc with one's best intentions to abstain rigidly from personifying imponderables. On the other hand, it is not in keeping with critical and objective and sober observation and study of human nature to speak of certain emotions combining to form others, or acting against each other, or suppressing one another, or consisting of so and so many "elements," or being "related" to certain "instincts," or being innate or absent in some individuals. There is danger that these forms of diction be taken by those who use them as full truths existing *per se* instead of as linguistic symbolizations. Before reporting our attempts to "group" and subdivide the available terms for human reactions as expressed in the features, we may therefore be permitted to state that under emotions, as dealt with in this study, we understand (with Adolf Meyer) essentially regulative mixtures of affective and topical materials and action-tendencies no longer of any definite performance value, except as signals or social reactions. This distinguishes them sufficiently from other forms of mentally integrated reactions, such as cognition and conative urges and attempts and desires and appetites and their action tendencies. Considering, however, the fact that, in judging facial expressions, also conative and cognitive forms of implicit behavior were seen overtly projected in the countenances by a comparatively large number of subjects, these terms, occasionally referred to as "intellectual feelings" and "attitudinal states," had also to be included in our grouping.

Although we recognize each and every emotional reaction as a unique, unequalled and unprecedented event, which, in its entire setting, is not expected to repeat itself by any one save by the Nietzschean poetic dream of "eternal recurrence," we see that certain sets of facts resembling each other more or less closely have been selected for the formation of a special name, which is to convey stenophonically an impression of the sum total of facts involved in the reaction. Thus the name of an emotion comes to

be something like a snapshot from the linguistic camera. The meaning of the term "fear" implies the idea of existing or anticipated danger as well as the individual's attitude in the face of this danger. There are other sets of facts which, in spite of their resemblance to the combination alluded to as fear, show sufficient dissimilarity to have warranted the creation of other names, such as apprehension, dread, fright, terror, horror, alarm, etc. Since we see in all of these terms thus designated the common denominator of danger plus reaction to it,—a reaction that may be more or less intense, more or less differing in its expression but always more or less similar in its entirety,—we are justified in saying, without leaving the firm ground of objectivity, that the above words may be considered as representing a "group" of "related" names of emotions. A study of the definitions, semantic values, etymologic sources, everyday usages, and synonymic relations of the 365 terms, with which we have to work, shows that a considerable number of such groups must be recognized. For practical purposes, it was found advisable to select one characteristic word in each group as its representative; these words will be found underscored in the table giving the grouping of terms for emotions and their interrelations (Table I). Further consideration has taught us that we find emotional reactions which, with reference to the responsible situation or the overt or implicit behavior in it, may show resemblance to two or more other reactions which are decidedly not within the same group. Thus, it must be conceded that anxiety bears close relations to sets of facts listed in the fear group and to others enumerated under the heading of mental suffering; embarrassment belongs to the perplexity group as well as to the terms combined under the common denominator of self-consciousness. Practically all terms of the dislike group denote reactions which bear more or less close resemblances to certain forms of mentally integrated functioning listed separately in the disgust, resentment, and meanness groups. In order to do justice to these well-known observations, an attempt was made in our table to indicate the relations with the aid of lines connecting the names of similar reactions in the various groups. Thus we obtain a classification of the terms for emotions,

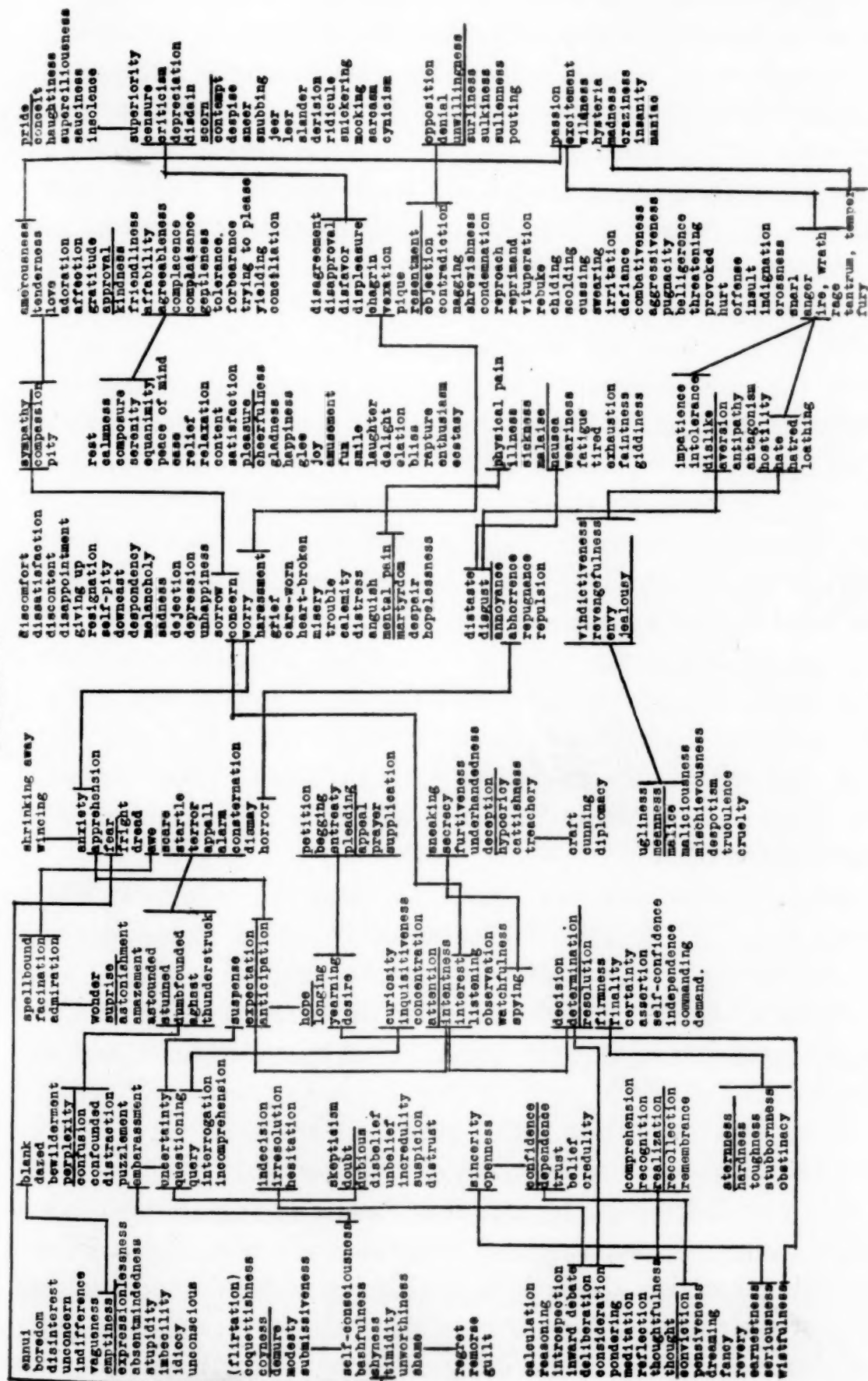
intellectual feelings and attitudinal states as expressed in the features of the human face, which is not based on any theoretical principles and tries to take into consideration the multiplicity and variety of behavioristic, linguistic and situational aspects from a practical and objective point of view. It is felt that any terms not included in the 365 returns of the students could easily be placed properly in the table. On the other hand, it is admitted that one or the other designation might perhaps be assigned a somewhat different place either within the group or in a different group by other investigators. The connecting lines try to do away with this difficulty as much as possible.

The term "shock" has not been included in the table. It is too general a reaction, as may readily be seen in the explaining and supplementing adjectives and in the divergency of situations to which it was applied in the analyzed returns. It was given as containing unpleasant (fear, horror), pleasant, hedonically undetermined (surprise), and aesthetic ("shock to finer sensibilities") implications.

2. *Semantic and Etymologic Considerations*

Kurath, in an interesting and painstaking study (which would have gained a great deal by the omission of the introductory theoretical pages), has traced the semantic sources of the words for the emotions in Sanskrit, Greek, Latin and the Germanic languages. Table II, which has been adapted from his monograph, shows that, like all other abstract terms, the names of emotional reactions have their origin in very concrete happenings. A great number of them are derived from descriptions of physical states, motions, or activities, others from the factual setting giving rise to the reaction, or from perceptions through the senses (bright, dark, taste, sweet, hot, warm), or—much less than one would expect—from onomatopoetic interjections. An etymologic study demonstrates this even more clearly, thus emphasizing the fact that the judgment of emotions from facial (and other somatic) expressions has from time immemorial been a powerful social factor regulating human adaptations and mutual reactions and that the later abstract nomenclature is nothing but

TABLE I



BEING AN ATTEMPT TO GROUP THE 365 TERMS GIVEN IN THE STUDENTS' RETURNS, AND TO INDICATE THE INTERRELATIONS BETWEEN THE GROUPS

a translation from mimic into verbal terminology. When we name an emotion, we actually allude, without being aware of it, in most cases to all or a part of the overt behavior serving as a manifestation of the emotion. In other, less frequent, instances, we refer to the situation from which the reaction arose. Thus fear originally denoted danger. In Anglo-Saxon it had the meaning of both danger and fear. Old High German *fara* was used in the sense of danger as well as fright. In modern German *Ge-fahr* signifies danger exclusively, without the implication of fear. Thus we have the interesting fact that of two words derived from the same Germanic sources the German term denotes a situation, whereas the English term denotes the emotion coincident with the situation. Going further back to the Indo-European family, one finds the same root represented in Latin *peri-culum* (= danger), from which English *peril* was borrowed (indirectly through the medium of French), so that now we have in English one word from the same root furnishing the name of the reaction, and another giving the name of the setting. A still further reference to the ultimate source shows that the common root *par* had the meaning of travel, or passing through (seen in Greek *περάω*, I go through; Latin *ex-perior*, English *fare*). This indicates that fear was originally used of the perils and experiences of way-faring (Skeat).

Another term originally giving a situation is alarm, which refers to a "call to arms" (corrupted French *à l'arms*, perhaps an imitation of Italian *alle arme*). Apprehension alludes to a condition of being seized by someone or something (from Latin *ap-pre-hendere*; the root *ghad* meaning to grasp, to seize, and represented in English to get); it thus becomes practically identical in its original implication with "surprise" and "epilepsy" (from Greek *ἐπιλαμβάνομαι*, to be seized or overcome).

It is very interesting to note that these philologic relations between names of emotions and situations are reversible. Terms signifying emotional reactions have later come to be employed also for their causes. Terror may also indicate a person or thing that inspires terror, dread "a person or thing regarded with dread" (Webster's Dictionary), horror that which is horrible,

TABLE II

Semantic Sources of the Words for Emotions

(Abbreviated adaptation from Kurath)

Words meaning:	Furnish Expressions for:
move lively, hop, skip hasten, speed, strive stretch out grasp move back and forth, waver, shrink	cheerfulness, gaiety, mirth zeal, desire, longing, envy, joy desire, will, hope desire, greed excitement, irritation, resentment, anger, envy passion, greed, grief
tremble writhe bristling (of the hair) cover, hide, turn away grumble, grind the teeth strangle, throttle cut, bite rub, scratch, gnaw, sting press, pinch, squeeze droop grow, rise, swell	fear irritation, anger fear, rejoicing shame anger, wrath; sorrow, grief distress, grief; anxiety, fear; irrita- tion, anger pain; grief, sorrow pain; suffering, distress, sorrow sadness pleasure, enjoyment, happiness, hope; haughtiness resentment, anger
slowness of motion stand still, be stiff blush	grief, sorrow; longing amazement, love, delight passion, love, delight
bright or shine dark taste sweet hot, warm thirst	delight, pleasure; desire, longing gloominess inclination, delight, love pleasure, joy, gladness suffering, grief; sympathy, kindness, delight desire, craving
danger cover, shelter, safe return labor, toil play	fear happiness, bliss, pleasure, love, joy suffering, misery, distress amusement, mirth
heaviness, burden bear, carry	distress, grief endure; suffer; dare
derivatives of interjections	various emotions

perplexity that which perplexes, astonishment the object causing such an emotion, etc.

By far the greatest number of the emotional vocabulary refers etymologically to somatic activities, attitudes, and expressions.

Leer is directly derived from Middle English *lere*, which stands for cheek, face, complexion, mien (Icelandic *hlýr* means cheeks). Suspicion describes the facial expression of looking at secretly or askance (from the corner of the eye; Latin *susplicere*, to look up to, originally also in admiration or esteem). Superciliousness (from Latin *super*, above, and *cilia*, the eyebrows) is haughtiness as demonstrated by raising the eyebrows. Despise (from *despicere*) is an emotion in which one looks down on someone. In sarcasm (from Greek *σαρκάζειν*, to tear flesh) one shows the teeth like a dog who is ready to tear his victim. Sneer and snarl also compare the appearance in these reactions with that of a grinning and growling dog. Pouting means puffing out the lips or cheeks (etymologic origin uncertain). Horror refers to the bristling of the hair (root *ghars*, to be rough; Sanskrit *hrish*, to bristle, said of hair, as token of both fear and pleasure; Latin *horrere* for *horsere*, to bristle, be rough; to dread).

Somatic reactions other than facial expressions are implicated in the following terms. Terror alludes to the accompanying tremor; the root is *tars*, to tremble, be afraid; it is seen in Sanskrit *tras*, tremble, fear, and *trása*, terror, in Latin *terrere* (for *tersere*), to dread, originally to tremble, Old Slavish *treso*, to shake, and reflexive *treso se*, to tremble, Lithuanian *triszù*, to tremble. In consternation one is thrown down (*consternare* is an intensifying form of *consternere*, to bestrew or throw down). Wonder is related to terms meaning turn around, such as to wind, or German *wenden*, and indicates a turning towards, or away from something. The flight reaction in fear is perhaps (that is, if the assumption of the etymologists be correct) best expressed in *startle*, a frequentative form of *start*, which seems to be related to German *Sterz*, Swedish *stjert*, Low German *steerd*, English *start*, tail, and to mean "show the tail" in flight or in tumbling over. In coquetry one presents the picture of a strutting coquet, or little cock. In elation one is lifted up (from *e*—and (t)*latus*); toleration, on the other hand, being derived from the same source, has the active meaning of carrying a burden, or suffering (Latin *tollere*; Greek *τλῆναι*, to suffer; Sanskrit *tul*, to lift; *A-tlas* is the

bearer, or sufferer). Grief equally indicates the carrying of a heavy burden, being substantivized from the Latin adjective *gravis* and Old French *gref* or *grief*, burdensome, heavy, sad. In dejection and depression one is thrown or pressed down or cast down ("downcast").

The Indo-European roots for choking have contributed a considerable share towards the naming of emotions. The root *tam* (Vedic *tam*, to choke, Sanskrit *tam*, to become breathless, immovable, staring) is responsible for Latin *timere*, to fear, *timiditas*, hence English timidity. Worry still has the transitive meaning of seizing by the throat, or strangling (Shakespeare has: "To worry lambs and lap their gentle blood"); it comes from the root *wargh*, to choke, and is cognate with Dutch *worgen*, German *würgen*, to strangle, suffocate. *Agh*, to choke, is the common origin of a vast variety of words, a number of which denote emotions; it was, in Greek and Latin, nasalized into *angh* and gave rise, among other terms, to words which were taken over into English as anger, anxiety (German *Angst*), anguish (Latin *angere*, Greek *ἄγγειν*, to choke, strangle; perhaps also Anglo-Saxon *oga* and *ege*, fear; ugly is derived from the same root; quinsy is *κυνάγχη*, a dog throttling). Awe also belongs to this group.

It is not our intention to go into the details of the etymology of all 365 terms of our list. A few more examples may suffice to demonstrate the original concreteness of these words. Coyness comes from Old French *coi*, earlier *coit*, Latin *quietus*, "quiet." Saucy is Latin *salsus*, or salted, full of salt, pungent. One who is sullen (Old French *solain*, Latin *solus*, alone) wishes to be left alone, hates company. Being in trouble is finding oneself in a *turbula*, a small disorderly crowd of people. He who is in suspense hangs in the air, is "suspended." A stubborn person is like a "stub," immovable, stiff. Aversion depicts the act of turning away. Nausea originally was sea-sickness (Greek *ναυοία*, from *ναῦς*, ship). A sincere person is, if the assumption is correct, as pure as honey without wax ("sine cera"). The terms distaste and disgust are self-explanatory.

A few terms are due to contractions or corruptions of other,

already established, names of emotions or descriptions of behavior. Demure is Old French *de murs*, that is, *de bons murs*, of good manners. Both annoy and ennui indicate that something is "in odio," or disliked. Joy is corrupted from Latin *gaudia*, plural of *gaudium*.

This selection, so it is hoped, brings home the realization that most of the names of the emotions are, in their origins, intimately connected with either the individual's reactions or with the responsible setting or with both. In the grading of the students' returns a knowledge of these facts is of essential advantage.

3. *Supplementing Adjectives, Combinations and Alternatives*

As there were no restrictions of any kind placed in the way of the students' description of what they believed they recognized in the photographs, any attempt at grading had to give proper consideration not only to the "best terms" but also the additions in the form of epitheta, alternatives of the "either . . . or" type, and combinations of terms to denote the simultaneous expressions of two or more related or conflicting "emotions." It makes a great difference in the grading of the degree of identification of the picture posed for rage, whether it is judged as mild, or violent, or horrified, or pretended anger. It is evident that the interpretation "violent anger" will receive a much higher score (possibly the highest, if the given situation is adequate) than "mild" or "pretended anger." "Mere tolerance" becomes something quite different from "tolerance," "simulation of pain" from "severe pain," "pleasant surprise" from "unpleasant" or "bewildered surprise." "Watchful fear" comes much closer to the right naming of the suspicion portrait than "sympathetic terror." Additions of another name to the "best term" often amounted to nothing more than tautologies, effecting practically no change in the evaluation; in other cases they altered considerably the scoring mark; it is certainly not the same if, again in the suspicion photograph, fear was given with suspicion, or anxiety, or aversion, or hatred, or worry, or indecision, or with suspense. The same is true of the alternatives, which, however, were offered much less frequently.

C. THE SITUATIONAL FACTOR

Any judgment of emotional expression remains without much significance if it is not viewed as the recognition of an indicator of something that is happening, or that has happened, or that is expected to happen. Allport says very aptly: "Dropping into the middle of a moving-picture show, we find the expressions of the actors merely a disturbing or ridiculous set of grimaces until we have caught up the thread of the story." We are not much concerned about a newborn infant's crying, because we have no way of knowing what he is reacting to in each particular instance and whether there are any expectations connected with it; we therefore do not think of attaching emotional value to the child's behavior. But if we see a ten-year-old girl crying, we immediately see in the act relations to the past as well as to the future, and the questions come up: "What has occurred to displease her?" and "What does she want?" An intelligent adjustment of the difficulty will depend entirely upon a familiarity with these facts and their elaboration. An understanding and quick conjuring up of the situational possibilities that may have led or contributed to an observed facial expression is therefore socially at least as important (if not even more significant) as the naming of the reaction. One finds, as a matter of fact, that children, when judging countenances, are in a much better position to estimate the adequate setting than to give the abstract name of the suggested emotion.

A few examples will easily demonstrate how necessary it is to consider the setting as given by the students in grading their returns. A proper term with an adequate situation will obtain the highest score. But even the most fitting "best term" will have to receive a lower mark, if the given situation is not in accordance with what one would naturally expect to have taken place. On the other hand, the answer which offers a term not quite acceptable will gain a few points if it shows that the observer has at least recognized to what occurrence the photographed person might have reacted. In interpreting the horror picture, the value of the judgment naming a term of the fear group will be considerably reduced if the portrait is felt as a reaction to the doctor's

telling her that her tonsils must be removed; it is rather unusual that the advice of a procedure now so commonly used and known as relatively harmless should evoke such a horrified expression. Another student, in giving his opinion of the same picture, will receive proper credit for suggesting a more probable setting ("accused of a crime she did not commit"), even though the "best term" is one of the surprise group. Similarly, in judging the despair photograph, the attitude of hopelessness and of being at a loss as to what to do comes out very frequently in connection with words belonging to the perplexity, thought, and fear groups; on the other hand, words of the mental suffering column, more or less closely related to despair, will lose a great deal of their value if linked with such "settings" as "Recollection of event," or "Something lost—a forgotten memory," or "She wishes to be left alone."

D. THE PERSONALITY ASPECT

1. *The Investigator*

In discussing the problems of the present investigation with other workers, the writer has occasionally been confronted with the question, sometimes implying serious criticism, whether the scoring of the returns is not influenced to a more or less appreciable extent by the personality of the one who undertakes the rating; it was said that one individual might be disposed to be more lenient or more severe than the other and that even the same person, censuring the judgments at different times, might be governed by somewhat different tendencies and considerations. It will be readily admitted—and even the enthusiastic Lavater made this concession—that physiognomy will never attain the exactness of mathematics. But what other science dealing with mentally integrated behavior can be expected to narrow itself down to the inelastic rigidity and absoluteness of numerical precision? Is it not the pluralistic attitude, illustrated in this paper perhaps a little too sketchily and attempting to include all important factors entering into the problem, which saves one from one-sidedness and arbitrariness and from doing gross injustice to the object under study? It is very true that one engaged

in any scientific research in the field of human activities must bring with him a certain familiarity with the facts and an ability to single out those topics which are relevant and indispensable for the objectivity of the results. If one keeps this in mind, it will, considering certain natural limitations inherent in all psychobiologic work, not matter so much if one becomes guilty of an occasional deviation of one or two points from what another individual, working with the same facts, might obtain. The various criteria for grading discussed above warrant as much precision as is possible in the observation of human beings.

2. *The Subjects*

It would be very fascinating to correlate the students' returns with their personal experiences and general development, particularly with their own emotional lives, but such a task would soon assume Herculean proportions. It would probably explain why one observer names as a pleasure provoking situation the sight of a blue vase with a yellow flower and another describes the setting of the interest photograph as a court scene when the foreman of the jury is reading the verdict. A personality study would undoubtedly be of help in the evaluation of the judgments both in their linguistic and situational aspects.

In our consideration of the returns we must also be aware of the fact that even the person who has an emotion cannot always himself be sure about maintaining that he understands it as completely as might be. Syz tried to correlate felt emotion with the galvanic reflex as objective indicator, with the result that the subject's discrimination between emotional and non-emotional responses did not check up with the galvanometric readings. Guilford, in discussing Syz's work, makes this pertinent remark: "It is quite conceivable that this lack of agreement between subjective report of emotion and the galvanometric change is due to the objective method itself. With no other criteria than the introspective reports on the one hand and the galvanic changes on the other, we cannot say which interpretation is correct. Choosing one interpretation in preference to the other can be made only from a bias either in favor of the introspection or the

'objective' methods." At any rate, the fact remains that if there is some doubt about one's being able to identify his own emotions, the difficulty of recognizing them in others must be appreciated. At the same time, it cannot be denied that somatic, and particularly facial expressions of others observed as more or less standardized and stereotyped symbols and signals of certain emotional states should make it easier to "read" another person's emotion than one's own.

3. *The Person Expressing an Emotion.*

The Feleky photographs have the advantage (for our purpose) of being intended for recognition. We know, however, that facial expression and actual content or attitude need not always coincide. One can sham and "act" to conceal and exaggerate emotions. Such judgments as "hidden pride" or "pretended anger" or "control of smile" indicate that some of the students have thought of this possibility. The notorious "poker-face" shows that Talleyrand's bon mot about spoken language which serves to hide our thoughts may at times also apply to the language of facial expression.

It may finally be mentioned that, although Darwin found that certain more fundamental expressions seem to be universal, a marked, geographically and racially determined difference is to be expected in the results of the same experiment with the Feleky pictures obtained from North American, South American, Italian, Mongolian, African, Negro, etc., individuals in their respective countries and languages.

IV. RESULTS OF THE EXPERIMENT

1. *Identifiability of the Photographs*

All the foregoing considerations were applied to the returns of 409 students, 364 male and 45 female, containing the judgments of the emotional expressions of a selection of ten, or twelve, or thirteen of the eighteen Feleky photographs enumerated above. The grading of the interpretations not only permits to measure the subjects' ability to judge various countenances, but also gives one an opportunity to obtain a measure of the indentifiability of each portrait. The highest score given was 10, the lowest, 0. Every answer receiving a mark of 7 or more was, conforming with the principles of the rating (acceptable term, situation, adjectives and combinations when offered), considered as a satisfactory recognition of the picture. Even if there was some doubt occasionally as to whether one or the other reply having a score of 6 should not be advanced one point, and vice versa, this would hardly alter the final results, since the total average for 6 amounts to only 4.2 per cent of all scores. These conditions are shown in Table. III, where with each photograph the percentages of each mark from ten to zero are given and also the combined percentages of all scores from 7 to 10 and those from 0 to 6. We see there that the order of recognizability of the portraits, from highest to lowest, is as follows: Surprise, fear, breathless interest, contempt, horror, determination, disgust, sneer, hate, despair, pain, shame, rage, sympathy, suspicion, pity, interest, justified anger.

It is of interest to compare this scale of identifiability with those obtained by other investigators. (Ruckmick found that some emotional expressions, especially when the emotion becomes intellectualized, gave a much less uniform response on the part of the observers than others and that the "primary emotions," as love and hate, joy and sorrow, were much more uniformly interpreted than the "secondary" ones, like repulsiveness, sur-

TABLE III
IDENTIFIABILITY OF THE PHOTOGRAPHS

	10	9	8	7	6	5	4	3	2	1	0	0-6	7-10
Shame.....	1.30	9.09	20.78	22.08	9.09	7.78	9.09	9.09	5.20	2.60	3.90	44.75	53.25
Breathless interest.....	0.77	2.70	2.70	62.16	6.17	4.64	1.93	6.17	2.32	4.25	6.17	31.67	68.33
Interest.....	10.38	1.53	0.78	5.39	2.70	36.55	9.00	10.00	3.85	6.91	13.82	81.92	18.08
Suspicion.....	15.53	4.18	1.79	5.97	1.19	3.28	16.72	19.10	16.72	6.56	7.96	72.53	27.47
Agreeable surprise.....	63.30	12.66	0.00	1.27	3.78	6.34	0.00	1.27	2.54	3.78	5.08	22.77	77.23
Pity.....	2.52	0.00	0.00	16.45	3.80	8.86	12.66	21.52	15.19	11.40	7.60	81.03	18.97
Determination.....	23.65	2.03	9.46	26.35	2.03	3.38	10.81	10.81	4.05	7.43	0.00	38.51	61.49
Righteous anger.....	5.00	0.60	1.20	10.80	2.40	9.20	36.00	15.23	5.40	6.17	8.00	82.40	17.60
Extreme horror.....	21.13	36.12	3.20	1.72	0.74	3.20	15.23	4.42	6.13	5.65	2.46	37.83	62.17
Physical suffering.....	44.68	4.18	0.47	4.44	4.94	3.42	3.42	3.88	14.30	13.08	3.19	46.23	53.77
Fear.....	36.12	8.11	19.90	5.90	3.20	4.42	2.95	5.14	2.46	8.11	3.69	29.97	70.03
Hate.....	7.63	11.34	9.61	27.09	4.19	2.95	4.92	3.69	4.19	10.10	14.29	44.33	55.67
Sympathy.....	12.24	9.51	0.61	14.72	14.72	4.92	8.59	8.28	7.06	8.59	10.74	62.92	37.08
Despair.....	11.25	4.69	10.31	28.12	5.94	5.62	9.69	9.38	9.69	4.06	1.25	45.63	54.37
Rage.....	18.00	21.35	4.18	6.27	1.50	3.00	4.50	1.80	12.83	11.94	14.63	50.20	49.80
Disgust.....	45.23	3.66	5.14	6.36	5.62	11.00	3.18	5.38	5.38	6.36	2.69	39.61	60.39
Sneer.....	5.45	31.97	5.45	13.60	5.45	6.80	6.12	3.40	4.76	3.40	13.60	43.53	56.47
Contempt.....	17.33	22.67	12.00	13.33	2.67	2.67	4.00	5.33	0.00	2.67	17.33	34.67	65.33
Total average.....	19.00	10.35	5.98	15.10	4.20	7.00	9.30	7.91	6.78	6.78	7.50	49.47	50.53

prise, distrust and defiance. Buzby obtained the largest number of "correct" judgments (63 per cent) for "horrified," then followed "disdain," "disgust," and "bewilderment," and "anger" and "dismay" were at the bottom of the list (of six Piderit models). Langfeld has this scale: Laughter, amazement, bodily pain, hate, fear, disgust, doubt, anger. Gates has: Laughter, pain, anger, fear, defiance, appeal, scorn, surprise, and a blending of sorrow and joy. Moss remarks that more people recognize delight and physical suffering than any of the other emotions represented and that astonishment and grief are misinterpreted by more people than any of the other emotions pictured.

A comparison of these scales may tend to make one unnecessarily pessimistic as to the value of the entire investigation. The discrepancies may certainly to a large extent be derived from the lack of any uniformity of procedure, from a difference of the faces (Piderit models, various photographs), sometimes from one-sidedness of the criteria. They make it on the other hand desirable that similar studies be made, attempting to see what results would be obtained from other groups of individuals with the same pictures and utilizing the same considerations.

If we apply to the returns of Mrs. Feleky's subjects the same grouping of terms as was used in our own material, then we find for some of the photographs an unusually close resemblance, whereas in others there is a more or less conspicuous divergency. In judging the photograph posed for horror, our students gave 65 per cent names of the fear group, Mrs. Feleky's critics gave 68 per cent, the figures for the resentment group were 15 per cent and 16 per cent, respectively, for physical states 5.5 per cent and 5 per cent, for the surprise group 5 per cent and 6 per cent, for the passion group 3 per cent and 2 per cent. The despair picture shows similar relations between our material and Mrs. Feleky's figures: Mental suffering group, 44 per cent and 42 per cent; fear group, 29 per cent and 31 per cent; surprise group, 7 per cent and 8 per cent; perplexity-uncertainty groups, 6 per cent and 15 per cent; thought-attention-doubt groups, 5.5 per cent and 7 per cent; undifferentiated emotions: 2 per cent for both. More

or less close agreement exists also in the judgments of disgust, fear, surprise and determination.

A compilation of the two leading terms (those most frequently offered, and those second in frequency) shows that in most cases either the first or the second leading term or both coincide very well with the emotion for which the portrait was posed. These conditions are shown in Table IV. The leading terms in "Rage" are anger and rage (making together 40 per cent of all words given in the judgments of this picture), in "Surprise" they are surprise and astonishment (71 per cent of the total returns), in "Physical Suffering" headache and pain lead with together 45 per cent, in "Horror" the words most frequently used are horror and fear (42 per cent) and in "Fear" they are fear and horror (48 per cent), in "Disgust" 49 per cent of the students named disgust and next in order of frequency was scorn with 4 per cent. Leaders in "Righteous Anger" were puzzlement (8 per cent), followed by anger and perplexity (6 per cent each); in "Shame," coyness and coquetry (26 per cent), in "Interest," pleasure and interest (26 per cent); in "Suspicion," fear and suspicion (36 per cent); in "Pity," pleading and pleasure (13.5 per cent); in "Determination," anger and determination (47 per cent); in "Hate," anger and hate (25 per cent); in "Sympathy," sorrow and pity (27 per cent); in "Despair," anxiety and despair (10 per cent each); in "Sneer," contempt and scorn (19 per cent); and in "Contempt," disdain and scorn (32 per cent). Thus, with only one exception ("Pity"), one or both of the leading terms refer either literally or synonymically to the intended expression.

A perusal of the tables attached to this study, which give with each presented emotion the best terms arranged in groups (and compared with Mrs. Feleky's figures), the supplementing adjectives, combinations, alternatives, and situations, will show that very few terms were used to interpret some of the photographs, while as many as eighty and ninety (in one case 98) words were employed in the judgment of others. By dividing the number of names offered as best terms for each picture by the number of

TABLE IV
FIRST AND SECOND LEADING TERMS, SCATTERING QUOTIENTS, AND "NO REPLIES."

Emotion	First leading term (%)		Second leading term (%)		Scattering quotient	No replies %
	Present study	Feleky	Present study	Feleky		
Shame.....	Coyness (17)	Modesty (22)	Coquetry (9)	Coyness (10)	0.53	3.9
Breathless interest.....	Surprise (54)	Surprise (30)	Wonder (5)	Wonder (14)	0.18	4.5
Interest.....	Pleasure (17)	Interest (22)	Interest (9)	Expectancy (19)	0.32	3.8
Suspicion.....	Fear (19)	Fear (17)	Suspicion (17)	Dread (9)	0.29	5.7
Surprise.....	Surprise (62)	Surprise (52)	Astonishment (9)	Wonder (12)	0.22	1.3
Pity.....	Pleading (7.5)	Tenderness (18)	Pleasure (6)	Sympathy (14)	0.51	6.2
Determination.....	Anger (24)	Determination (23)	Determination (23)	Firmness (8)	0.30	0
Anger.....	Puzzlement (8)	Anger (9)	Anger (6)	Worry (8)	0.26	5.7
Horror.....	Horror (23)	Horror (32)	Fear (19)	Terror (13)	0.11	1.5
Physical suffering.....	Headache (34)	Phys. suffering (25)	Pain (11)	Mental suffering (16)	0.15	1.5

TABLE IV
FIRST AND SECOND LEADING TERMS, SCATTERING QUOTIENTS, AND "NO REPLIES."

Emotion	First leading term (%)		Second leading term (%)		Scattering quotient	No replies %
	Present study	Feleky	Present study	Feleky		
Fear.....	Fear (31)	Terror (14)	Horror (17)	Fright (12)	0.12	2.0
Hate.....	Anger (18)	Ugliness (13)	Hate (7)	Disgust (11)	0.30	0.7
Sympathy.....	Sorrow (14)	Worry (10)	Pity (13)	Anxiety (9)	0.20	7.0
Despair.....	Anxiety (10)	Despair (11)	Despair (10)	Distraction (9)	0.21	0.6
Rage.....	Anger (24)	Horror (16)	Rage (16)	Rage (9)	0.18	3.0
Disgust.....	Disgust (49)	Disgust (36)	Scorn (4)	Repugnance (14)	0.15	0.75
Sneer.....	Contempt (10)	Sneer (33)	Scorn (9)	Contempt (19)	0.35	9.5
Contempt.....	Disdain (16)	Contempt Disdain (21)	Scorn (16)	Scorn (11)	0.41	12.0

returns, a "scattering quotient" was obtained, which could be used more advantageously for comparison than absolute figures. Table IV gives the quotient together with the leading terms; it shows that horror and fear were interpreted with the least amount of scattering (quotients of 0.11 and 0.12), then follow disgust and physical suffering (with 0.15 each), then breathless interest, rage, and sympathy. At the other end of the list we find contempt (0.41), pity (0.51), and shame (0.53). The quotients of Mrs. Feleky are generally a little higher; one may wonder whether this is due to the fact that the subjects were given a long list of names to choose from. Her quotients for breathless interest, interest, determination, and hate are exactly or almost exactly like those obtained from our own material.

The last column of Table IV deals with the fact that a number of students was entirely unable to identify some of the photographs to the extent that they failed to give any name or situation or probable utterance or thought of the individual portrayed. There was a complete blank in place of any reply. There is, after all, a certain difference between offering an inadequate interpretation and complete helplessness with resigned admission of failure. Determination was the only picture which was interpreted by all subjects. In others the percentage of blanks was comparatively high. It is rather strange to notice that good identifiability and low number of blanks do not at all coincide, nor is there always a noticeable relation between the scattering quotient and the percentage of absence of any replies. It was also found that students who were very apt in the judgment of most pictures could sometimes not produce anything with reference to one or two photographs. Contempt has the highest percentage of "No replies" (12 per cent), then follow sneer (9.5 per cent), sympathy (7 per cent), pity (6.2 per cent), anger and suspicion (5.7 per cent each). Breathless interest, which is third highest in identifiability and fifth lowest in scattering, comes next with 4.5 per cent. Lowest, next to determination, are despair (0.6 per cent), hate (0.7 per cent), disgust (0.75 per cent), surprise (1.3 per cent), and horror and physical suffering (1.5 per cent each).

The average identifiability of all photographs (scores from 7 to 10) amounted to 50.53 per cent. In Allport's experiments, the average scores attained by various groups of subjects ranged between 45 and 50 per cent, of the 525 judgments analyzed by Langfeld only about 33 per cent were found to be "correct." Our highest score of identifiability was 77 per cent for fear, the lowest rates were 18.97 per cent for pity and 18.08 per cent for interest. This shows that there was a very pronounced difference in the recognizability of the various expressions.

As to the situations, we had better luck with our students than Landis apparently had with his subjects, who only gave four predominant generalities: pleasant, unpleasant, religious, and maternal. A perusal of the report of the returns at the end of this study will soon convince the reader of the detailed concreteness and wide variety of settings. In arranging our material, the following combinations could be separated.

- a. Adequate name with adequate situation;
- b. Adequate name with inadequate situation;
- c. Adequate name with no situation;
- d. Inadequate name with adequate situation;
- e. Inadequate name with inadequate situation;
- f. Inadequate name with no situation;
- g. No name with adequate situation;
- h. No name with inadequate situation;
- i. No name and no situation (listed as "No replies").

The settings were taken from practically every possible occurrence in life, covering every day happenings (meeting a friend; talking to a neighbor); wife-husband and mother-child relations, social events (parties, etc.), college activities (bearing on examination, graduation, school athletics), specific experiences of medical students (operations, autopsies) and particularly those connected with their course in psychiatry, accidents, deaths, being confronted with good or bad news, etc. It is rather surprising that the religious element entered very rarely into the returns (only in the form of "prayer"), whereas in the material

analyzed by Landis it played such an outstanding part. Answers in the column of probable thoughts or utterances were sometimes, in absence of the description of a setting, given full credit as offering (adequate or inadequate) situations if they were clear and concrete enough to deserve such consideration. A call for help in combination with the fear or horror expressions, for instance, gives a fair picture of the present or immediately imminent danger.

2. Ability to Judge Facial Expressions.

Each student was given an individual score, which was obtained by the addition of all marks for judging the ten or twelve or thirteen photographs presented to him and by dividing the sum total by the number of pictures. The highest possible score was 10, the lowest, 0. Table V shows the distribution of the scores. The highest mark received by any student was 8.5, the lowest 2.2. The average ability to judge emotions from the facial expressions of the photographs was found to be 5.71. The women gave a slightly higher average (5.85) than the men (5.69).

It seemed of great interest to make sure just how many of the

TABLE V
DISTRIBUTION OF SCORES AMONG THE SUBJECTS

Score	Men		Women		Both sexes	
	Number	%	Number	%	Number	%
Above 8.0.....	3	0.8	0	0.0	3	0.7
7.1—8.0.....	43	11.8	4	9.0	47	11.5
6.1—7.0.....	90	24.7	12	26.7	102	25.0
5.1—6.0.....	120	33.0	19	42.1	139	34.0
4.1—5.0.....	82	22.5	10	22.2	92	22.5
3.1—4.0.....	20	5.5	0	0.0	20	4.8
2.1—3.0.....	6	1.7	0	0.0	6	1.5
Total.....	364	100.0	45	100.0	409	100.0

photographs were properly recognized by the individual subjects. Landis, in summarizing his work, made the remark that the names given by his observers were no more often correct than one would expect by chance and that it is particularly impossible to name accurately the "emotion" (the quotation marks are his) when one has only a photo of the face. Table VI shows that only one student (the one who received the lowest score) failed to identify any of the pictures presented ("identification" again being acknowledged in every case where a mark of 7 or above could be given). None of the students identified more than 85 per cent of the photographs, 157 subjects recognized the expressions in more than 50 per cent of the portraits, certainly much more than one would expect to get from a mere chance guessing "with the eyes closed." Only 55 persons (or 13.5 per cent) were unable to recognize more than 40 per cent of the expressions.

TABLE VI
Showing the Percentage of Photographs Identified by the Individual Observers

Per cent of identified pictures	Number of students
0	1
1-10	4
11-20	14
21-30	36
31-40	64
41-50	133
51-60	72
61-70	60
71-80	20
81-90	5
90-100	0
	Total 409

In the following tables returns having the second highest (in the highest the "situations" are of too general a nature) and the lowest scores are reproduced together with the marks for each reply:

I

Photograph posed for	Best term	Situation and utterance	Score
Fear	Fear and element of surprise	Finding a murdered person . .	10
Disgust	Disgust. Revulsion of feeling.	Seeing decayed body. "Ugh!"	10
Physical suffering	Pain	Headache. "O, my head" . . .	10
Despair ("What shall I do now?")	Despair	Death of husband or child. "What shall I do?"	10
Determination	Determination . .	Asked for the hand of her daughter. "I will not!"	10
Suspicion ("accompanied by fear"—Feleky)	Fear and indecision	Hears a sound when alone. "What was that noise?" . . .	7
Rage	Indignation . . .	Has been slapped on the face. "You—you—"	8
Horror	Fear	Sight of a ghost. Scream . . .	9
Hate	Contempt	Toward a man who double-crossed her. "You cur!" . . .	7
Sneer	Self-consciousness	Has been given a compliment. "You flatterer."	2
Total score			8.3

II

Photograph posed for	Best term	Situation	Score
Despair	Worry	Failure	4
Physical suffering	Disgust	Displeasing situation	2
Rage	Horror	Quick fear	3
Horror	Anger . . . . .	. . . . .	3
Disgust	Worry	Inside the mind	1
Hate	Depression	Mental agony	1
Fear . . . . .	. . . . .	. . . . .	0
Interest	Sorrow . . . . .	. . . . .	1
Righteous anger	Depression . . . .	. . . . .	1
Suspicion	Fear . . . . .	. . . . .	6
Breathless interest	Horror . . . . .	. . . . .	1
Sympathy	Sad . . . . .	. . . . .	4
Total score			2.25

The contrast between these two returns demonstrates very clearly the wide range of ability to judge emotional expression. In the first case we find nine of the ten portraits properly identified (five of them completely with full verbal agreement), with very concrete, adequate situations and utterances offered in every instance. To this student every expression evidently "meant" something. The second subject is utterly incapable of seeing a proper significance, or any situational significance whatsoever, in the portraits. The few remarks offered in the situation column are either giving synonyms (quick fear for horror; mental agony for depression) or generalities. "Inside the mind" as situation for worry certainly means nothing. None of the answers could be given a mark of 7 or more.

This contrast gives also an idea of the tendency of the returns to group themselves into different types. There are the students who are well able to give satisfactory interpretations together with concrete settings. Others give more general and vague descriptions, such as "a displeasing situation" or "something has gone wrong." Still others are unable to give any situations. There are students who give up too easily and leave too many blanks. There are observers who have the tendency to see tragedy in almost every expression, others who are rather optimistic in their interpretations.

3. Correlation Between Intelligence and Judgment of Facial Expression

It seemed of particular interest to compare our scores with the results of the Thorndike intelligence test. Since the arrangement of the tests varied in the different classes, only 198 returns obtained from uniform questions could be used in the calculation of the correlation coefficient. Table VII shows the respective distributions of the students' ability to judge emotional expressions on the one hand and of the Thorndike scores on the other. It is interesting to note that none of the subjects with an emotional judgment rating of below 4.0 ranked higher than 130 in the intelligence test, and that all of those whose judgment score

TABLE VII
CORRELATION BETWEEN JUDGMENT OF FACIAL EXPRESSION AND RESULTS OF THE THORNDIKE INTELLIGENCE TEST.

Judgment of Facial Expression	Intelligence Rating										Total
	51—60	61—70	71—80	81—90	91—100	101—110	111—120	121—130	131—140	141—150	
2.1—2.5	1	1	...	...	...	2
2.6—3.0	1	...	...	...	...	...	1
3.1—3.5	1	...	...	1	...	...	...	...	3
3.6—4.0	1	...	1	...	2	2	2	2	...	...	10
4.1—4.5	1	1	4	4	4	4	1	...	20
4.6—5.0	1	9	4	1	7	3	1	26
5.1—5.5	2	3	5	5	11	1	...	27
5.6—6.0	2	2	1	8	11	9	7	...	40
6.1—6.5	...	1	...	2	1	5	3	3	2	1	18
6.6—7.0	1	...	1	8	8	3	5	...	26
7.1—7.5	4	1	4	8	4	...	21
7.6—8.0	2	1	...	...	3
8.1—8.5	1	...	...	...	1
Total.....	1	1	6	8	26	39	43	48	23	3	198

was above 7.0 ranked higher than 90. The four students whose ability to judge countenances expressed itself in a rating of 7.5 or more, ranked in their intelligence testing between 101 and 130. As a whole, the correlation coefficient is quite low, amounting to not more than .21. Nor is there any obvious connection between intelligence score and concreteness of the given situations.

V. CONCLUSIONS

This study was undertaken with the purpose of reviewing and, whenever indicated, utilizing the work that has been done previously by other investigators on the problem of judging emotions from facial expressions, with the further aim of contributing an analysis of our own material with proper consideration of the various factors entering into an adequate evaluation of the procedure and its results and limitations, and with the ultimate view of building up a broad and workable basis for additional research. A pluralistic attitude has been advocated for the use of our results, with the understanding that any "part-feature or even a more complete observation should be viewed only in the light of a broader reaction-tendency, inferred from the number of data available in the case" (Adolf Meyer). It saves one from making such radical statements as the one that the results of interpretation of facial expressions from photographs would be the same if the observers were permitted to venture chance guesses with their eyes closed. But it also saves one from taking too one-sided a stand and from wanting to make one's grading depend on the use of one or two terms as being the "correct" returns, disregarding the many other important facts to be considered. It will be readily conceded that portraits are static cross-sections of something that has a highly dynamic significance and that they lack important features which are observable in live reality. They do not reproduce the vasomotor (blushing, pallor), sudorific, salivatory, lachrymal, and motor changes coincident with so many emotional reactions. The pilomotor phenomena are less pronounced. Respiratory features are indicated only by the position of the mouth and the nostrils. Any clue to possible visceral and general somatic responses is absent. The situation giving rise to the reaction is left out of the picture.

On the other hand, the judgment of expressions from portraits is not to be looked upon as an achievement in itself. It is a test

performance with more or less standardized and conventionalized reproductions of emotional expressions, which bring out a great variety of points lending themselves to a study of individual resemblances and differences in the observers. One is struck by the great variation of the shades and nuances of the emotions and the linguistic apparatus which they command, by the astounding contrasts in the ability to infer a more or less definite setting for each reaction, and by the scattering occasioned by such a variety. Thus the experiment becomes much more than just a study of people's attempts to translate the language of countenances into verbal formulations. It shows what the students can do with the limited and abbreviated manifestations of certain forms of mentally integrated behavior in the way of appreciating the facts at hand, sensing the additional factors likely to be involved, and integrating them into a dynamic setting with proper consideration of the past, present and future.

It was demonstrated that a rating of this accomplishment can never be more than approximate. It was shown that, in order to do justice to the multiplicity of factors, one has to evaluate the verbal responses in the light of their common usage, synonymic values, semantic and etymologic implications, the situational problem, the qualities of the interpreted expressions, and the personalities of both the individual showing the emotional reaction as well as the one called upon to judge it.

Only a pluralistic attitude can lead to a better understanding of the nature of the emotions (and of any other form of human behavior). Without it, we can get no further than the hardly satisfying, partly skeptical and partly speculative, presentations of the Wittenberg Symposium on Feelings and Emotions of 1928. Without it, we shall keep wondering with McKinney "what we shall choose to call emotion", and with Wechsler as to "what constitutes an emotion". An objective approach will have, just like our students with the photographs, to work with what one finds, unprejudiced by any hypotheses, trying to investigate into all the aspects offering themselves, without conceding exclusive privileges to endocrinologic, or introspective, or psychoanalytic, or phenomenologic-descriptive, or neurologizing usurpations.

With regard to emotional facial expressions, one might refer with advantage to Nony's excellent presentation, where the conditions are enumerated, which are necessary in order that they might be meaningful:

"To live in society.

"To react spontaneously to an emotional shock in the same way as the people with whom we live.

"To be capable of self-observation and of hetero-observation, both for him who is moved and sees the effect of his emotions on others, and for the observer who sees the expression and knows its significance.

"To be capable of producing again the whole or only a part of the spontaneous emotional reactions, particularly the specific movements that are socially the most important reactions.

"That such voluntarily provoked reactions be visible or audible for the spectators.

"That there be a social agreement as regards the significance of the socialized expression."

At the end of this study, I wish to take the opportunity to thank Dr. Adolf Meyer, Director of the Phipps Psychiatric Clinic, for permitting me to use his material and for his continuous kind suggestions and advice. This is also the place to emphasize that Dr. Meyer's lectures on objective psychobiology have greatly contributed towards the contents and spirit of this study.

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VII. TABULATION OF THE STUDENTS' RETURNS

1. POSED FOR SHAME (MODESTY)

Number of analyzed returns: 77.

a. Best Terms

Coyness—self-consciousness groups: 32—41.5% (F 52%).*			
flirtation	2	submissiveness	1
coquetry	7	bashfulness	1
coyness	13	shyness	2
modesty	1	timidity	2
demure	1	shame	2
Perplexity-uncertainty groups: 8—10% (F 1%).			
bewilderment	1	interrogation	1
embarrassment	4	indecision	1
questioning	1		
Doubt group: 5—6.5% (F 3%).			
doubt	1	suspicion	2
skepticism	1	dubious	1
Surprise group: 5—6.5% (F 0%).			
wonder	1	surprise	4
Attention group: 5—6.5% (F 5%).			
curiosity	2	interest	1
inquisitiveness	1	watchfulness	1
Pleasure group: 5—6.5% (F 4%).			
satisfaction	1	happiness	1
pleasure	2	smile	1
Resentment-scorn groups: 4—5% (F 4%).			
displeasure	1	reproof	1
disfavor	1	sarcasm	1
Expectation-hope groups: 4—5% (F 4%).			
expectation	1	wistfulness	2
anticipation	1		
Mental suffering group: 2—2.5% (F 2%).			
disappointment	1	sadness	1
Miscellaneous: 4.			
dismay	1	laugh or get mad	1
underhandedness	1	hurt and replacated	1
No replies: 3.			

* F refers to Mrs. Feleky's results as reported in her book on "Feelings and Emotions."

b. *Supplementing Adjectives*

Coyness—self-consciousness groups: Coquetry—studied.
 Perplexity-uncertainty groups: Embarrassment—youthful. Interrogation—pleasant.
 Surprise group: Surprise—mild.
 Attention group: Interest—amorous.
 Pleasure group: Happiness—hidden.
 Resentment group: Reproof—mild.

c. *Combinations*

Coyness—self-consciousness groups: Coyness—with shyness. Modesty—with pleasure. Bashfulness—with embarrassment.
 Perplexity-uncertainty groups: Embarrassment—with coyness; pleasure.
 Surprise group: Surprise—with pleasure.
 Pleasure group: Pleasure—with anticipation.
 Resentment group: Displeasure—with vexation.
 Mental suffering group: Disappointment—with worry.

d. *Alternatives*

Submissive or apologetic. Flirtation or fancy. Surprise or shock.

e. *Situations*

Coyness—self-consciousness groups: Receiving a complaint (2); someone has just paid her a compliment and she is trying not to appear pleased; a man has made complimentary remarks and she does not want him to know she understands what he means; has just been flattered by a man; refusing to believe what some flatterer has told her: "Stop, you big tease!"; her young gentleman friend has said how sweet she is; someone has said something nice to her; flirtation (5); sees handsome man and tries to make impression; trying to influence another to think well of her; inviting approach; looking at her lover: "Now, please, don't do that!"; teasing someone: "What do you think?"; "Don't say that!"; "You don't mean that"; "Oh, do you mean it?"; recovering from a bit of tears: "I was a fool to cry but you shouldn't have said that"; "Do you like what I have done?"; trying to make up with someone she has embarrassed; is to make a speech in public and hesitates to accept; has been invited to her first "boy party"; new social situation; approached by her lover; young man makes a move toward her; attempting to hide what is going on inside; being eyed with suspicion.
 Perplexity-uncertainty groups: Watchful waiting; trying to decide question asked.
 Doubt group: "Do you really mean it?"; kidded by half-stranger; young woman doubting your word.
 Surprise group: "How rude you are!"; hurt feelings; good news; a visitor is calling: "I wonder who it is?"
 Attention group: At the party; watching a young man; "I wonder what he thinks?"; "I wonder what he will do?"
 Pleasure group: Flattery; having been given a compliment.
 Resentment-scorn groups: Some displeasing remark; an inferior has been insulting; naughty child.
 Expectation-hope groups: At the theater: "What will he do next?"; woman looking at her husband: "May I?"; having said something she thinks is funny; "Will he laugh?"

2. POSED FOR BREATHLESS INTEREST

Number of analyzed returns: 259.

a. *Best Terms*

Surprise group: 173—66% (F 70%).

wonder	12	amazement	10
surprise	140	astounded	1
astonishment	9	dumfounded	1

Pleasure group: 28—11% (F 5%).

relief	3	laughter	1
pleasure	7	delight	1
gladness	2	bliss	1
happiness	1	rapture	3
glee	1	ecstasy	1
joy	7		

Fear group: 12—4.5% (F 9%).

anxiety	3	terror	1
fear	1	dismay	1
fright	1	horror	1
awe	4		

Attention-expectation groups: 11—4.3% (F 13%).

interest	3	hope	2
expectation	6		

Mental suffering groups: 8—3% (F 0%).

disappointment	1	distress	1
resignation	1	mental pain	2
giving up	1	despair	1
sadness	1		

Thought-confidence groups: 5—2% (F 0%).

thought	1	openness	1
comprehension	2	belief	1

Emptiness group: 4—1.5% (F 0%).

expressionless	1	imbecility	1
stupidity	1	unconscious	1

Miscellaneous: 6.

bewilderment	1	admiration	2
feeling of impossibility	1	incredulity	1
shock	1		

No replies: 12.

b. *Supplementing Adjectives*

Surprise group: Surprise—pleasant (41); joyful (3); joyous; agreeable; happy (2); delighted (2); sudden; blank (2); bewildered; unpleasant.

Pleasure group: Pleasure—mild; slight; amazed. Joy—sudden. Delight—great. Rapture—satisfied.

Attention group: Interest—breathless.

Mental suffering group: Disappointment—sudden.

Thought group: Comprehension—sudden.

c. *Combinations*

Surprise group: Surprise—with joy (2); delight; elation; amusement; interest; idiocy.

Pleasure group: Pleasure—with gladness; trust; astonishment. Joy—with surprise and approval.

Confidence group: Openness—with complete confidence. Belief—with trust.

d. *Alternatives*

None.

e. *Situations*

Surprise group: Meeting someone unexpectedly; someone arrives unexpectedly (friend, lover, son; husband home early); unexpected news; sudden recognition; watching a spectacular plot; winning the raffle; hearing that a neighbor got a bargain in town; finding a million dollars; relief from fear; pleasant disbelief; "You don't say so!"; something hoped for has just occurred.

Pleasure group: Unexpected meeting with old friend (2); good news (2); surprise at joke; horse she bet on won the race; a tense situation has let down; recognition of something previously misunderstood; given unexpected present.

Attention-expectation groups: A choice bit of gossip; listening to a story (3); interrupting conversation; something about to happen; unexpected news hardly believed; foreman of jury is reading verdict.

Mental suffering group: Someone loved has turned out badly.

Confidence group: One she loves is coming in.

Emptiness group: Accident; nothing makes any difference, something wrong inside.

3. POSED FOR INTEREST

Number of analyzed returns: 260.

a. *Best Terms*

Pleasure group: 120—46% (F 3%).

rest	1	cheerfulness	5
calmness	4	gladness	5
composure	2	happiness	3
serenity	2	joy	7
equanimity	1	amusement	1
ease	1	smile	3
relief	9	sunshine after storm	1
relaxation	1	delight	2
contentment	13	bliss	5
satisfaction	9	rapture	2
pleasure	43		

Attention-expectation groups: 44—17% (F 61%).

concentration	1	expectation	20
attention	7	anticipation	1
interest	24	hope	1

Sympathy-approval groups: 25—9.5% (F 8%).

sympathy	3	kindness	1
amorousness	1	affability	1
love	5	agreeableness	1
adoration	2	complaisance	3
affection	2	gentleness	1
gratitude	1	tolerance	1
approval	2	trying to look pleasant	1

Mental suffering group: 18—7% (F 1%).

resignation	2	grief	2
sadness	3	mental pain	1
unhappiness	1	martyrdom	1
sorrow	4	hoplessness	1
worry	1	crying	2

Physical states: 7—2.7% (F 1%).

pain	4	tiredness	1
sickness	1	natural pose	1

Surprise group: 6—2.3% (F 3%).

wonder	3	half-amazement	1
surprise	1	stunned	1

Emptiness group: 6—2.3%.

blank	2	indifference	2
unconcern	1	absentmindedness	1

Pleading group: 4—1.5% (F 0%).

pleading	3	supplication	1
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Thought-realization groups: 3—1.2% (F 3%).

calculation	1	recognition	1
earnestness	1		

Miscellaneous: 17.

self-consciousness	1	dislike	1
timidity	1	hypocrisy	1
puzzlement	1	resolution	1
incomprehension	1	shock	1
yearning	1	jealousy	1
pride	1	misunderstanding	1
sarcasm	1	passion	1
fear	2	"not absolutely sure"	1

No replies: 10.

b. *Supplementing Adjectives*

Pleasure group: Satisfaction—mild; sublime. Pleasure—mild (2). Happiness—passionate. Amusement—cynical. Smile—forced. Rapture—pleasing.

Attention group: Attention—close. Interest—mild (2); pleasant; pleasurable; joyful; eager; absorbed.

Approval group: Amorousness—languishing. Affability—social. Agreeableness—meek. Complaisance—placid. Tolerance—amused.

Mental suffering group: Mental pain—suppressed.

Physical states: Pain—slight; deep.

Surprise group: Wonder—timid. Surprise—pleasant.

c. *Combinations*

Pleasure group: Contentment—with happiness. Satisfaction—with serenity.
 Pleasure—with joy; enjoyment; pensiveness; slight trace of sadness.
 Rapture—with expectation.
 Attention group: Attention—with expectancy. Anticipation—with attention.
 Sympathy-approval groups: Sympathy—with devotion and love. Affability—with kindness.
 Emptiness group: Indifference—with stupidity.

d. *Alternatives*

Interest or attention.

e. *Situations*

Pleasure group: Pleasant company; in ordinary conversation; pleasant joke; good news (3); beginning of pleasant understanding; talk of friend's success; seeing a friend; a friend appears; meeting someone she knows; seeing someone she likes; return of sweetheart; just after a kiss; "We love"; happy thoughts; everything is going well; pleasant recollection; being praised; general peace of mind; hearing pleasant sounds or feeling pleasant body sensations; posing for a picture; seeing a blue vase with yellow flower; the child is better; graduation of her child
 Attention-expectation groups: Conversation; listening to someone (2), to interesting news, to a lecture (2), to interesting unfinished story (2); hearing a speech; listening intelligently as part of an audience; watching a show; having picture taken; meeting a person; good news, seeing someone falling; anticipation of welcome events (2); waiting arrival.
 Sympathy-approval groups: Contemplating a person she likes; seeing a loved one; looking at her boy friend; beaming on her child; languishing suspense in erotic situation; appreciated performance of a person; listening to a neighbor (2); forgiving of some minor wrong.
 Mental suffering group: Just finished crying; a parting friend; injury to someone; suppression of mental pain; something grievous has occurred; the storm is over; some tense situation; after completing a piece of work.
 Passion: Trying to seduce someone.
 Hypocrisy: Listening to an enemy and trying to appear friendly.
 Pride: On delivering commencement address.

4. POSED FOR SUSPICION

Number of analyzed returns: 335.

a. *Best Terms*

Fear group: 101—30% (F 41%).

anxiety	20	terror	1
apprehension	6	alarm	2
fear	63	horror	5
dread	4		

Doubt group: 75—22% (F 8%).

skepticism	2	distrust	12
doubt	1	stealthy watching	1
dubious	1	looking someone over	1
suspicion	57		

Disgust-dislike-jealousy groups: 32—9.5% (F 20%).

distaste	1	aversion	3
disgust	7	hate	6
annoyance	2	loathing	1
repugnance	2	jealousy	3
repulsion	3	envy	1
dislike	4		

Resentment-scorn-opposition groups: 26—8% (F 11%).

disapproval	3	disdain	2
chagrin	1	scorn	2
resentment	1	contempt	1
scolding	1	sulkiness	1
defiance	1	sullenness	1
injured pride	1	fault-finding	1
anger	10		

Mental suffering group: 20—6% (F 5%).

discontent	1	worry	2
disappointment	1	grief	2
resignation	1	distress	2
despondency	1	anguish	2
depression	1	mental pain	1
sorrow	2	despair	1
concern	3		

Thought-attention groups: 15—4.5% (F 3%).

calculation	1	contemplation	1
deliberation	1	curiosity	1
meditation	1	attention	1
reflection	1	interest	3
thought	3	spying	1
pensiveness	1		

Deception-cunning groups: 11—3% (F 1%).

sneaking	1	craftiness	1
secrecy	2	cunning	1
furtiveness	3	diplomacy	1
deception	1	scheming	1

Self-consciousness group: 6—2% (F 1%).

coquetry	1	shame	2
unworthiness	1	guilt	2

Perplexity-uncertainty group: 5—1.5% (F 1%).

perplexity	1	at bay	1
questioning	2	hesitation	1
looking askance	1		

Surprise group: 5—1.5%.

surprise	5
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Pleading group: 4—1.2%.

entreaty	1	pleading	1
petition	1	supplication	1

Pleasure group: 2—0.6%.

glee	1	ecstasy	1
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Miscellaneous: 13.

excitement	1	idiocy	1
agitation	1	flight	1
hope	2	stage emotion	1
suspense	1	sympathy	1
firmness	1	wish for something known	
hardness	1	but impossible to get	1
meanness	1		

No reply: 19.

b. Supplementing Adjectives

Fear group: Anxiety—sympathetic. Fear—watchful; timid; nervous. Terror—sympathetic.

Dislike group: Hate—concealed.

Mental suffering group: Concern—worried.

Attention group: Curiosity—distasteful.

Perplexity group: Perplexity—fearful.

c. Combinations

Fear group: Anxiety—with suspense; pleading. Apprehension—with fear. Fear—with anxiety (3); suspicion (2); aversion; hatred; worry; indecision; suspense. Horror—with fascination; loathing.

Doubt group: Suspicion—with distrust; fear (2); apprehension; sneer. Distrust—with fear; secretiveness.

Disgust—dislike—jealousy groups. Dislike—with hatred; jealousy. Hatred—with malice. Jealousy—with suspicion. Envy—with anger.

Resentment-opposition-scorn groups: Anger—with suspicion. Sullenness—with petulance.

Mental suffering group: Concern—with apprehension; anxiety. Distress—with disapproval.

Attention group: Attention—with fear or disgust. Spying—with watching.

Cunning group: Craftiness—with guilt. Cunning—with plotting.

Uncertainty group: Hesitation—with uncertainty.

Pleading group: Supplication—with fear.

Self-consciousness: Guilt—with shame.

Determination group: Firmness—with cunning.

Sympathy group: Sympathy—with sadness.

d. Alternatives

Doubt group: Suspicion—or doubt; anxiety.

e. Situations

Fear group: Danger; desire to escape from something; expecting something unpleasant to happen (2); expecting a striking; waiting for news of operation; attacked by a man (2); animal attack; a burglar; sees someone walking downstairs; awaiting verdict; seeing something yet afraid to look; seeing an hallucination; someone is following her; in danger of being detected or caught (2); queer noise; "What is that noise?"; a mouse (4); mouse in the waste basket; unpleasant sight (2); watches child being operated upon; her child is sick; sickness of loved one; the doctor wants

to take her blood; street car wreck; husband beating her; "cheating"; inability to make up her mind; hoping for something better; cringes from something.

Doubt group: Trying to verify; someone she mistrusts is in the next room; attempting to hide her thoughts; looking for a fault; "Oh, no, you don't"; "What is the doctor doing to the child?"; fear of harm to self or child; dubious as to outcome of operation of a dear one; thinking that something might jump on her; crime committed by someone whom she suspects; is her husband faithful? (2).

Disgust-dislike-jealousy groups: A mouse; looking at an enemy; sight of nudity; the villain arrives; sight of object of jealousy; personal rebuff; suspecting someone is talking; slight affected sophistication.

Resentment-scorn-opposition groups: Disturbed at prayer; her husband has refused her money.

Mental suffering: Sick child (2); child on operating table; ready to pray—sick child; prayer for safety.

Thought-attention groups: Lack of understanding; watches the unfolding of a plot; seeing an unpleasant but temptingly forbidden object; determination of course of action after disagreeable occurrence.

Deception-cunning groups: Sneaking away from something she does not want found out—maybe child not to be waked; trying to conceal something; trying to avoid detection; scared at being caught in some misdemeanor.

Self-consciousness group: Doing something stealthy; being suspected; exposure to physician.

Uncertainty group: Wondering what to do; wanting situation explained; "Does he suspect?"

Pleading group: Prayer attempt; asking for the benefit of the children.

5. POSED FOR AGREEABLE SURPRISE

Number of analyzed returns: 79.

a. Best Terms

Surprise group: 62—78.5% (F 84%).

wonder	1	amazement	3
surprise	49	situation named only	2
astonishment	7		

Fear group: 5—6.5% (F 4%).

fear	1	terror	1
awe	1	horror	1
startle	1		

Attention group: 4—5% (F 1%).

attention	1	interest	1
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Miscellaneous: 7.

pleasure	2	maniac	1
disagreement	1	stupidity	1
insulted	1	blank	1

No replies: 1.

b. *Supplementing Adjectives*

Surprise group: Surprise—pleasant (5); sudden (3); great; expected; gossipers.

Fear group: Startle—mild.

Miscellaneous: Pleasure—malicious. Insulted—mildly.

c. *Combinations*

Surprise group: Wonder—with amazement and surprise. Surprise—with awe; pleasure.

Fear group: Awe—with curiosity.

d. *Alternatives*

None.

e. *Situations*

Surprise group: Unexpected visitor; friend came back after a long time (2); unexpected (startling) news (3); hearing new scandal (2); being told that the neighbor fights with her husband; talking to the town gossip; gossiping; her child has said something; observing pet or baby; seeing some little one cute and lovable; looking at something never seen before; sudden amusing sight; receiving a gift; having been jestingly insulted; Tommy has upset the cream; strange noise; supposedly honest person has been caught stealing.

Fear group: Meeting suddenly an unexpected situation; impending disaster; sight of murder.

6. POSED FOR PITY

Number of analyzed returns: 79.

a. *Best Terms*

Approval group: 15—19% (F 29%).

love	4	forbearance	1
soothing	1	trying to please	2
approval	3	yielding	1
kindness	1	conciliation	1
gentleness	1		

Hope-pleading groups: 14—18% (F 12%).

hope	1	begging	2
longing	1	pleading	6
desire	2	appeal	2

Thought-doubt groups: 12—15% (F 2%).

meditation	2	skepticism	1
thoughtfulness	2	doubt	4
conviction	1	disbelief	1
dreaming	1		

Pleasure group: 10—12.5% (F 5%).

satisfaction	2	amusement	2
pleasure	5	fun	1

Resentment-disgust groups: 9—11% (F 4%).

reproof	4	disgust	1
rebuke	1	situation named only	2
anger	1		

Self-consciousness group: 3—3.8% (F 18%).

coquetry	1	shame	1
modesty	1		

Sympathy group: 2—2.5% (F 27%).

sympathy	1	pity	1
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Miscellaneous: 9.

pride	4	waiting for climax	1
interest	2	between smile and crying	1
irresolution	1		

No replies: 5.

b. *Supplementing Adjectives*

Approval group: Love—motherly.

Thought group: Conviction—honest.

Pleasure group: Satisfaction—motherly. Pleasure—quiet. Amusement—mild. Fun—dramatic.

Resentment group: Reproof—mild. Anger—pretended.

Miscellaneous: Pride—hidden.

c. *Combinations*

Approval group: Love—with bashfulness; interest. Approval—with diplomacy.

Pleading group: Pleading—with coquetry.

Resentment group: Reproof—with censure.

Sympathy group: Sympathy—with friendly compassion.

Miscellaneous: Interest—with affection; desire. Irresolution—with dependence.

d. *Alternatives*

None.

e. *Situations*

Approval group: Looking at child; speaking to child (3); motherly—"The dear little thing!"; correcting her child; disagreeing tactfully with someone; "Are you sure it's not wrong?"

Hope-pleading groups: Asking for a favor (3); "Come on and do this for me!"; "Won't you let auntie kiss you?"; looking at something she would like but can't convince herself she ought to get—an Easter bonnet; pleasant news; coquettish.

Thought-doubt groups: Reproving her child; looking at infant.

Pleasure group: Watching a child (3); watching the pet dog; hearing something which is personally pleasing; flattered—old maid being made love to; her child makes impression with her friend; reading a book; dramatic situation; having been asked an amusing question.

Resentment-disgust groups: Scolding the child; "Don't you know you hurt mother's feelings?"

Pride: Hidden; at child's behavior; watching her child toddling towards her.

Self-consciousness group: Flirting; praised by someone.

Sympathy group: "Poor thing!"; "You poor dear!"

Irresolution: "What would you do in my position?"

7. POSED FOR DETERMINATION

Number of analyzed returns: 148.

a. *Best Terms*

Resentment-opposition groups: 57—38.5% (F 26%).			
disapproval	6	irritation	4
displeasure	2	indignation	1
resentment	2	anger	36
defiance	1	temper	1
reproach	1	opposition	1
scolding	1	unfavorable consideration	1
Determination-sternness groups: 48—32.5% (F 44%).			
decision	1	self-assertion	1
determination	35	demand	1
finality	1	sternness	5
assertion	1	stubbornness	3
Disgust-dislike group: 8—5.5% (F 5%).			
impatience	2	annoyance	3
disgust	3		
Perplexity-uncertainty groups: 8—5.5% (F 1%).			
perplexity	2	indecision	1
puzzlement	4	misunderstanding	1
Attention group: 7—5% (F 0%).			
curiosity	1	interest	3
attention	3		
Scorn group: 5—3.5% (F 3%).			
criticism	2	disdain	1
depreciation	1	sarcasm	1
Doubt group: 5—3.5% (F 0%).			
doubt	4	suspicion	1
Thought group: 4—3% (F 3%).			
meditation	1	thought	2
reflection	1		
Miscellaneous: 6.			
reconciliation	1	anxiety	1
quizzical	1	suppression of intense emo-	
anticipation	1	tion	1
remorse	1		

b. *Supplementing Adjectives*

Resentment group: Defiance—angry. Indignation—righteous. Anger—determined (2); righteous.

Determination-sternness groups: Assertion—positive. Stubbornness—determined.

Disgust group: Disgust—mild.

Attention group: Interest—serious. Attention—hostile.

Thought group: Reflection—serious. Thought—deep.

c. *Combinations*

Resentment group: Disapproval—with determination. Anger—with sternness; command; puzzlement.

Determination-sternness groups: Decision—with determination. Determination—with obstinacy. Assertion—with determination and annoyance.

Disgust group: Disgust—with disapproval; reasoning. Annoyance—with anger.

Attention group: Attention—with concentration. Interest—with attention.

Doubt group: Doubt—with uncertainty. Suspicion—with dislike.

d. *Alternatives*

Irritation or anger.

e. *Situations*

Resentment-opposition groups: Scolding her child (4); disobedience of pupil; child was naughty; "Willie, put that drum in the closet!"; "Don't you dare answer back!"; being opposed, she refuses to back down from her position; someone has called her a liar; husband comes home late at night; child attacked by brute man; appraising the curtains; seeing a woman with too short a skirt; "I won't do it!"

Determination group: Teacher has been disobeyed; looking at disobedient child; making a child obey (3); giving command to her son (2); asked for her daughter's hand; bearing pain.

Disgust-dislike groups: Child walks with muddy shoes over kitchen floor just scrubbed; reproving the child.

Doubt group: Daughter came home late; argument with rent collector.

8. POSED FOR RIGHTEOUS ANGER

Number of analyzed returns: 335.

a. *Best Terms*

Perplexity-uncertainty groups: 84—25% (F 6%).

bewilderment	6	query	1
perplexity	19	interrogation	1
confusion	2	incomprehension	5
puzzlement	26	misunderstanding	3
uncertainty	6	indecision	1
questioning	14		

Resentment-unwillingness groups: 45—13% (F 16%).

disagreement	2	irritation	2
disapproval	2	defiance	2
displeasure	3	offense	1
contradiction	1	anger	19
argumentative	1	ire	1
nagging	1	rage	1
reproach	1	oppressiveness	1
reprimand	2	situation only given	3
scolding	2		

Thought-attention groups: 45—13% (F 10%).

calculation	4	curiosity	3
meditation	3	inquisitiveness	3
thought	8	concentration	5
pensiveness	2	attention	4
earnestness	1	intentness	2
sincerity	1	interest	7
contemplation	1	watchfulness	1

Mental suffering group: 36—11% (F 13%).

discontent	3	worry	17
disappointment	1	care-worn	1
sadness	2	anguish	1
depression	1	trouble	1
concern	8	situation only given	1

Fear group: 25—7.5% (F 20%).

anxiety	9	consternation	2
apprehension	2	dismay	2
fear —	8	horror	1
fright	1		

Surprise group: 25—7.5% (F 6%).

wonder	7	astonishment	3
surprise	12	amazement	3

Doubt group: 24—7% (F 4%).

doubt	15	incredulity	3
disbelief	3	suspicion	1
unbelief	1	distrust	1

Disgust-dislike-scorn groups: 12—3.5% (F 9%).

disgust	1	revenge	1
annoyance	3	superiority	1
aversion	1	disdain	1
antagonism	1	contempt	1
hate	1	sneer	1

Determination group: 9—2.7% (F 1%).

determination	2	sternness	6
dominance	1		

Expectation group: 2—0.6% (F 6%).

suspense	1	expectation	1
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Miscellaneous: 8.

quizzical	3	shock	1
satisfaction	1	imbecility	1
sizing someone up	1	unpleasantness	1

No replies: 19.

b. Supplementing Adjectives

Perplexity-uncertainty groups: Indecision—questioning.

Resentment-unwillingness groups: Disagreement—slight. Anger—justified; surprised.

Thought-attention groups: Thought—deep (3); difficult. Contemplation—deep; earnest; serious. Interest—intense (4); doubting. Watchfulness—stern.

Mental suffering group: Concern—deep (2); skeptical. Worry—disturbed.

Fear group: Anxiety—puzzled. Fear—anxious. Consternation—curious.

Surprise group: Surprise—unpleasant. Distrust—questioning.

Disgust-dislike-scorn groups: Revenge—justified. Contempt—bored; sneer—annoyed and contemptuous.

Determination group: Sternness—criticizing.

c. Combinations

Perplexity-uncertainty groups: Bewilderment—with anxiety. Perplexity—with wondering and concern. Puzzlement—with concentration; anger. Uncertainty—with worry. Questioning—with misunderstanding; interrogation; fear. Incomprehension—with puzzlement. Misunderstanding—with listening.

Resentment-unwillingness groups: Disagreement—with attention. Anger—with disappointment; doubt.

Thought-attention group: Meditation—with contemplation. Thought—with worry. Pensiveness—with puzzlement. Curiosity—with fear. Concentration—with disagreement. Attention—with concentration.

Mental suffering group: Sadness—with pain. Concern—with uncertainty; worry. Worry—with concern (3); perturbation; uncertainty; anger. Trouble—with worry.

Fear group: Fear—with anxiety; doubt.

Surprise group: Wonder—with inquiry. Surprise—with reprimand; anger; doubt; fear (2); disappointment. Astonishment—with anger.

Doubt group: Doubt—with hesitation; some humor. Disbelief—with wonder. Incredulity—with distress.

Suspense—with trouble.

Quizzical—with pugnacity.

d. Alternatives

Doubt or incredulity.

Worry or interest.

e. Situations

Perplexity-uncertainty groups: A different statement; listens to something hard to believe; some doubtful statement; something unfamiliar; "Could it be so?"; "Can this be true?"; "Don't understand"; inability (struggle) to understand (3); ignorance of what is going on; as if asking for repetition; solution of a situation; listening to someone; listening to a lecture.

Resentment-unwillingness groups: Scrutinizing; argumentative mood; maternal supervision; mother catches child in misdemeanor; correcting a child for some misdeed; doctor trying to inform her of her child's serious illness; response to insult; curiosity in a sudden crash; hearing something terrible.

Thought-attention groups: Effort to understand; attempt to comprehend; problem (2); viewing something new; strange machine; a lecture; listening to conversation; a lecture or conversation.

Mental suffering group: Internal trouble; thinking of some problem; awaiting a verdict.

Fear group: Bad news; death of a friend; family trouble; trying to warn friend of imminent danger; watches son walking fence.

Surprise group: Receiving bad examination return in which she expected to do well; husband drunk for the first time in years; insulted by peddler; child did something naughty.

Doubt group: Told something; argument; incredible story; hearing something said about someone she knows.

9. POSED FOR EXTREME HORROR

Number of analyzed returns: 407.

a. Best Terms

Fear group: 263—65% (F 68%).

anxiety	1	alarm	3
fear	77	consternation	1
fright	46	horror	92
startle	1	situation named only	2
terror	40		

Resentment group: 61—15% (F 16%).

reproach	1	anger	34
reprimand	1	ire	1
vituperation	1	wrath	1
defiance	3	rage	13
threatening	2	temper	1
indignation	3		

Physical states: 22—5.5% (5%).

pain	16	singing	2
oral examination	4		

Surprise group: 20—5% (F 6%).

surprise	8	amazement	3
astonishment	8	aghast	1

Passion group: 12—3% (F 2%).

passion	1	madness	2
excitement	3	insanity	1
hysteria	3	maniac	2

Disgust-dislike groups: 7—2% (F 0%).

disgust	4	dislike	2
abhorrence	1		

Pride-scorn groups: 7—2% (F 0%).

pride	1	scorn	2
disdain	3	derision	1

Mental suffering group: 4—1% (F 2%).

disappointment	1	sorrow	1
despondency	1	worry	1

Miscellaneous: 5.

boredom	1	shock	3
command	1		

No replies: 6.

b. Supplementing Adjectives

Fear group: Fear—extreme; sudden great; terrified; convulsive typical; intense; helpless; simulated; empty. Fright—extreme (5); great; sudden; intense (2). Terror—extreme (2); sudden; intense; distracted; nameless. Horror—extreme; great; indignant; maniacal.

Resentment group: Reproach—affected. Indignation—righteous. Anger—extreme (2); intense; horrified; violent; arrogant; defiant. Rage—blazing.

Physical states: Pain—extreme (2); deep; sharp; sudden.

Surprise group: Surprise—extreme (2); sudden; horrified (2); frightened; intense; great; unpleasant; comical. Astonishment—great.

Pride-scorn groups: Disdain—haughty. Derision—pathological.

c. Combinations

Fear group: Anxiety—with distress. Fear—with fright; terror (3); horror (2); dismay; suffering; uneasiness; surprise; excitement; disdain; shock. Fright—with fear; terror (3); awe; startle; scare; surprise. Terror—with fear (2); horror (2); shock (2). Horror—with fear; fright (3); scare; anger; pain. Awe—with fright.

Resentment group: Anger—with fear (2); apprehension; horror; rage; protest; surprise; disdain. Rage—with terror.

Surprise group: Surprise—with fear; horror (2). Astonishment—with fear.

Passion group: Excitement—with anger. Madness—with anger.

d. Alternatives

Fear or horror; fright. Surprise or pain. Pain or horror or wonder. Passion or dismay.

e. Situations

Fear group. Sight of accident (13); sight of murder (11); someone run over by a car; calling loudly to a child in danger; a child falling; child's dress on fire; sees harm done to her child; attacked by an animal (lion, bull, mad dog) (5); someone is throwing a rattlesnake at her; sight of a mouse (3); a rat, a snake (2); burglar (robber, thief) in the house (8); confronted by sudden danger (5); pistol pointed at her (4); flash of a gun; about to be shot; sees a man standing to shoot her; someone trying to force something on her; house on fire (3); trapped in burning building; sight of a ghost (8); impending operation; sudden noise; "How badly is he hurt?"; the doctor told her that her tonsils must be removed; simulation.

Resentment group: insulted (4); hurt vanity; husband has answered back; husband comes home drunk; scolding a peddler; her child did something bad; shouting at children in her garden.

Physical states: She has dropped the flatiron on her foot; someone has stepped on her foot; intense injury; burn; toothache; tooth being pulled; bitten by a dog; showing her teeth for examination; in the dental chair; singing.

Surprise group: Accused of a crime of which she is innocent.

Mental suffering group: Seeing a man eaten by an animal.

10. POSED FOR PHYSICAL SUFFERING

Number of analyzed returns: 405.

a. *Best Terms*

Physical states: 219—54% (F 44%).

pain	47	anguish	3
illness	8	nausea	4
sickness	4	headache	138
malaise	1	fatigue	2
suffering	6	weariness	1
disease	1	convalescence	1
distress	2	faintness	1

Mental suffering group: 50—12.5% (F 32%).

disappointment	1	grief	10
self-pity	3	distress	1
sadness	1	anguish	2
depression	4	mental pain	4
sorrow	10	despair	5
worry	4	hopelessness	5

Disgust-dislike groups: 50—12.5% (F 3%).

disgust	40	repulsion	5
abhorrence	2	aversion	2
repugnance	1		

Fear group: 44—11% (F 11%).

anxiety	7	appal	1
fear	6	alarm	1
fright	2	dismay	1
dread	3	horror	22
startle	1		

Surprise-perplexity groups: 10—2.5% (F 2%).

wonder	1	bewilderment	1
surprise	6	distraction	1
thunderstruck	1		

Resentment-scorn groups: 6—1.5% (F 0%).

displeasure	1	scorn	1
hurt	1	sneer	3

Thought-realization groups: 4—1% (F 2%).

meditation	1	recollection	1
thoughtfulness	1	credulity	1

Miscellaneous: 16.

shock	8	emptiness	1
agitation	1	remorse	1
boredom	4	suspicion	1

No replies: 6.

b. *Supplementing Adjectives*

Physical states: Pain—prospective. Headache—mild (3); slight; severe; terrible; miserable; bad.

Mental suffering group: Disappointment—extreme. Sorrow—hypocritical.
 Grief—intense. Despair—absolute.
 Disgust group: Disgust—mild; shuddering.
 Fear group: Fright—sickening. Horror—mild.
 Thought group: Recollection—sad.

c. Combinations

Physical states: Suffering—with self-pity. Pain—with dread; timidity; headache—with nausea (4); fatigue (5); discouragement; discomfort; sadness; depression (2); sorrow (3); worry; agony; irritation.
 Mental suffering group: Sorrow—with sympathy. Worry—with disappointment; shame. Despair—with anger; bewilderment. Hopelessness—with distress; despair.
 Disgust group: Disgust—with horror.
 Fear group: Anxiety—with indecision. Fear—with hesitation.
 Surprise group: Surprise—with awe; disappointment and sorrow; shock.
 Miscellaneous: Shock—with distress; grief.

d. Alternatives

Pain or worry: Grief; fatigue; disgust; fear (2): Physical or mental pain.
 Disgust or fear.

e. Situations

Physical states: Headache (138); stomach ache (4); intestinal disorder; nausea, or desire to vomit (4); operation on foot; examination of broken limb; trying to impress her husband; complaining type of women; looks as though she is convalescent.
 Mental suffering group: Someone dear to her is dying; accident or death of relative or friend (6); sight of accident; sees her child run over; her child is sick; bad (distasteful, unpleasant, distressing, unhappy) news (8); withdrawal of gaze from scene; hearing disgrace of daughter; disgraceful deed of relative; shame over some deed; failure in attempt at something; burdens; "I'll never see him again"; in need of assistance; disappointment over some argument; inside thought; begging for sympathy.
 Disgust-dislike groups: a. Unpleasant sight: terrible (disgusting, ugly, repulsive, horrid, morbid, sordid, revolting) sight (19); hair in food; decaying carcass; sight of dead body for the first time; someone killed or wounded; child run over by car; sight of blood; dead, bloody cat; scene of serious accident; sight of operation. b. Unpleasant odor. c. Unpleasant taste: taking castor oil. d. Provoked by action of others: horrid (unpleasant, shameful) action (3); husband with another woman.
 Fear group: "Will he arrive safely?"; bad news (3); son just married a washwoman; anticipation of pain (2), of an accident; watching a crime; witnessing an operation; sight of accident (8); "Take it away!"
 Surprise-perplexity groups: Unexpected and disturbing situation; loss of something important; painful awakening; hard to believe.

11. POSED FOR FEAR APPROACHING TERROR

Number of analyzed returns: 407.

a. *Best Terms*

Fear group: 294—72% (F 69%).

anxiety	10	scare	1
apprehension	4	startle	2
fear	125	terror	25
fright	45	alarm	4
dread	1	dismay	4
awe	5	horror	68

Surprise group: 47—11.5% (F 6%).

fascination	3	astonishment	8
surprise	38	amazement	2

Mental suffering group: 23—5.5% (F 6%).

despondency	1	stress	1
sadness	2	anguish	1
sorrow	5	mental pain	1
concern	2	despair	1
worry	6	hopelessness	1
grief	2		

Perplexity group: 10—2.5% (F 0%).

dazed	1	confusion	1
bewilderment	3	distraction	2
perplexity	2	puzzlement	1

Resentment group: 5—1.3% (F 9%).

rebuke	3	rage	1
anger	1		

Physical states: 5—1.3% (F 1%).

pain	1	hyperthyroidism	3
exophthalmic goiter	1		

Expectation group: 4—1% (F 1%).

suspense	1	expectation	3
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Miscellaneous: 12.

sympathy	1	excitement	4
pity	1	wildness	1
interest	1	blank of mind	1
modesty	1	absentminded	1
unpleasantness	1		

No replies: 8.

b. *Supplementing Adjectives*

Fear group: Fear—slight; suspended; inhibiting; perplexed; hysterical; helpless. Fright—sudden; terrible; horrified. Terror—mild; astonished. Dismay—shocked. Horror—astonished; distracted; partial.

Surprise group: Surprise—fearful (2); disagreeable (2); extreme; intense; spontaneous; mild; faint. Astonishment—unfavorable. Amazement—unexpected.

Mental suffering group: Concern—deep. Grief—wild. Pain—bad.

c. Combinations

Fear group: Anxiety—with fear and worry. Fear—with anxiety; fright (2); horror (3); dread; terror (2); pity and horror; surprise (5); puzzlement. Fright—with fear (2); anxiety; terror; surprise; anguish; some despair. Awe—with anguish. Terror—with fright. Horror—with wonder; surprise; puzzlement; sorrow.

Surprise group: Surprise—with some fear; disappointment; displeasure. Astonishment—with fear; anger.

Mental suffering group: Concern—with fear and anguish. Sorrow—with excitement. Worry—with fright and horror; surprise; hysteria.

Perplexity group: Perplexity—with fear.

Resentment group: Anger—with fright.

d. Alternatives

Fear or fright or pain: Terror; apprehension. Fright or shock. Scare or fright. Terror or fear. Horror or fear; grief. Surprise or astonishment; shock; displeasure. Astonishment or fear or horror. Sadness or sorrow. Worry or fear.

e. Situations

Fear group: Sight of accident (28); collision; a burglar in the house; confronted by sudden danger (13); about to be attacked (3); criminal attack; sight of murder (3); sees child falling (3), or stumbling, or dangerously near falling from a window (2); someone (child) run by a car (4), or about to be run over (2); she is herself in danger of being run over; sees mutilation of her child; child in danger from fire (4); facing a fire with all retreat blocked; child drowning; sight of a snake; a mad dog coming toward her; viewing a corpse (7); someone brought in badly injured (3); her husband is caught bootlegging; police are coming; she hears a blood-curdling shriek; being told a terrible tale; sudden bad news (2); something happens within her body; watching child during severe sickness (2); fear of consequence after crime; "Will he be saved?"; horrible scene; a terrible happening; fearsome sight.

Surprise group: Unexpected observance of the unusual; sight of an unexpected object; accused of doing something; being told she has a disease; bad news; mildly unpleasant situation; meeting a friend; a child in school has played some mean trick on the teacher; child getting run over; "You frightened me!"; sight of a mouse (2).

Perplexity group: Abominable sight; her friend has done something which she just cannot believe; "Is my soul safe?"; "What was it?"

Mental suffering group: Bad news; hearing of someone's death; loss of a friend; sight of her dead husband's body; sight of murdered person; the doctor just told her some unfavorable news about her sick child; someone dear is late; sad discovery: "I'm lost!"

Resentment group: Children in mischief; striking misdeed of her child; seeing her child playing in the wash tub of clothes she just left.

12. POSED FOR HATE

Number of analyzed returns: 406.

a. *Best Terms*

Resentment-unwillingness groups: 129—32% (F 14%).

disapproval	2	belligerence	2
displeasure	2	threatening	8
resentment	1	insulting	1
arguing	1	ready to fight	1
shrewishness	1	indignation	2
reproach	1	injured	1
reprimand	1	hurt	1
accusation	2	crossness	1
chiding	1	snarl	3
scolding	1	anger	75
swearing	1	rage	3
defiance	8	temper	1
aggressiveness	2	fury	1
pugnacity	2	surliness	3

Dislike-jealousy groups: 50—12.5% (F 19%).

dislike	6	loathing	1
aversion	1	vindictiveness	1
antipathy	1	revengefulness	4
antagonism	3	intended injury	1
hate	30	jealousy	2

Scorn group: 40—10% (F 20%).

disdain	1	jeer	1
scorn	11	leer	2
contempt	8	sarcasm	8
sneer	8	cynicism	1

Determination-sternness groups: 30—7.5% (F 7%).

determination	19	hardness	1
firmness	1	toughness	2
certainty	1	stubbornness	2
self-assertion	1	obstinacy	1
commanding	2		

Mental suffering group: 24—6% (F 3%).

discontent	1	sorrow	6
disappointment	1	concern	1
resignation	1	worry	1
downcast	1	grief	2
melancholy	1	distress	1
sadness	1	despair	1
dejection	2	(crying	1)
depression	2	(helplessness	1)

Disgust group: 22—5.5% (F 6%).

distaste	1	annoyance	1
disgust	18	abhorrence	2

Perplexity-uncertainty groups: 15—3.5% (F 0%).

bewilderment	1	uncertainty	1
perplexity	5	questioning	1
confusion	1	lack of understanding	1
puzzlement	3	indecision	1
complexity	1		

Thought group: 14—3.4% (F 0%).

consideration	1	seriousness	1
meditation	1	summing up	1
thoughtfulness	7	introspection	1
earnestness	2		

Attention group: 12—3% (F 0%).

inquisitiveness	1	interest	4
concentration	3	listening	2
attention	1	watchfulness	1

Doubt group: 10—2.5% (F 1%).

doubt	3	suspicion	5
incredulity	1	distrust	1

Fear group: 8—2% (F 1%).

fear	2	horror	2
dread	2	shrinking away	1
dismay	1		

Meanness-deception groups: 5—1.25% (F 15%).

malice	1	cruelty	1
despotism	1	treachery	1
truculence	1		

Pleasure group: 3—0.75% (F 0%).

satisfaction	1	elation	1
joy	1		

Miscellaneous: 14.

pain	6	study	2
sympathy	1	madness	1
pity	1	indifference	1
unpleasantness	2		

No replies: 31.

b. *Supplementing Adjectives*

Resentment group: Arguing—angry. Reprimand—forceful. Defiance—sullen; belligerent. Anger—extreme; aggressive; loathing; determined (4); determined, slow, and purposeful.

Dislike-jealousy groups: Dislike—extreme; impatient; intense; suspicious. Revenge—just.

Scorn group: Contempt—extreme.

Disgust group: Disgust—utmost; angry; troubled.

Thought-attention groups: Consideration—deep. Thought—deep. Attention—intense. Interest—deep; hateful.

Meanness group: Truculence—abusive.

c. *Combinations*

Resentment group: Defiance—with disgust. Snarl—with chagrin; sarcasm.
 Anger—with irritation; scorn; vindictiveness, resolution; determination (2); seriousness, cunning; disgust (3).
 Dislike-jealousy groups: Dislike—with ire; questioning. Hate—with revenge; anger; determination. Jealousy—with contempt.
 Scorn group: Scorn—with aversion. Contempt—with anger.
 Determination-steranness groups: Determination—with fear. Toughness—with defiance.
 Disgust group: Distaste—with displeasure. Disgust—with disagreement; pain.
 Doubt group: Doubt—with suspicion. Suspicion—with distrust.

d. *Alternatives*

None.

e. *Situations*

Resentment-unwillingness groups: Something has been said; insulted (offended) (3); on the other side of the fence; fighting with next-door neighbor; just before the hair pulling; in attacking position trying to insult; answering a verbal attack; "Don't meddle with me!"; giving someone a piece of her mind; calls someone down; castigating someone; preceding outburst against an enemy; listens to description of being beaten; chagrin at defeated aim; "I'll get you!"; "I have it in for you!"; misdemeanor of child; naughty child; "You don't love me any more"; husband has kept dinner waiting for a long while; "That husband of mine, wait till he comes home!"; calling down her husband; nagging at her husband; has something on the tip of her tongue and is not able to get it.
 Dislike-jealousy groups: Personal remark; antecedent events; determined to hurt if necessary; meets the woman who has taken away her husband.
 Scorn group: Speaking to subordinate; "You little devil!"; sees her husband with another woman; sees a man kill a child.
 Determination-steranness groups: "So that's the kind of person you are!"; trying to bully someone; annoyance at child; "Come here and I'll spank you!"; convincing another.
 Disgust group: Insulted (2); was expelled from school.

13. POSED FOR SYMPATHY

Number of analyzed returns: 326.

a. *Best Terms*

Mental suffering group: 128—39% (F 25%).

dissatisfaction	1	grief	8
disappointment	9	heart-broken	1
discouragement	3	misery	1
resignation	2	trouble	2
self-pity	2	distress	5
sadness	11	anguish	2
depression	3	suffering	1
unhappiness	1	despair	2
sorrow	45	hopelessness	2
worry	27		

Sympathy group: 74—23% (F 15%).			
sympathy	28	pity	42
compassion	4		
Physical states: 20—6% (F 4%).			
pain	17	fatigue	3
Resentment group: 18—5.5% (F 10%).			
disagreement	1	scolding	1
displeasure	5	irritation	3
reproach	1	hurt	1
reprimand	1	anger	5
Fear group: 14—4% (F 15%).			
anxiety	11	dread	1
apprehension	1	dismay	1
Disgust-dislike groups: 13—4% (F 17%).			
disgust	5	repulsion	1
annoyance	5	impatience	2
Perplexity-uncertainty groups: 9—2.75% (F 2%).			
bewilderment	1	puzzlement	1
perplexity	3	embarrassment	2
confusion	1	indecision	1
Thought group: 7—2% (F 2%).			
inward debate	1	seriousness	1
reflection	2	earnestness	1
thought	1	recollection	1
Attention group: 7—2% (F 1%).			
attention	1	interest	4
intentness	1	observation	1
Scorn group: 5—1.5% (F 2%).			
criticism	1	scorn	1
disdain	2	contempt	1
Miscellaneous: 8.			
surprise	2	indifference	1
distrust	1	prayer	1
regret	1	piety	1
independence	1		
No replies: 23.			

b. Supplementing Adjectives

Mental suffering group: Resignation—hopeless. Sadness—puzzled. Distress—mild; slight.

Sympathy group: Sympathy—pained. Pity—deep.

Resentment group: Disagreement—violent. Displeasure—mild. Anger—mild.

Fear group: Anxiety—intense.

Attention group: Interest—anxious. Observation—careful.

Scorn group: Contempt—sorrowful.

c. *Combinations*

Mental suffering group: Sadness—with discouragement; grief; worry. Sorrow—with pity; regret. Worry—with anxiety; pain; uncertainty. Grief—with sorrow.

Sympathy group: Sympathy—with anxiety; disgust. Pity—with disgust.

Disgust-dislike-scorn groups: Annoyance—with sorrow. Impatience—with disgust. Disdain—with disapproval.

Miscellaneous: Regret—with sorrow and disapproval. Independence—with stubbornness.

d. *Alternatives*

Sorrow or grief. Worry or sympathy. Distress or worry. Sympathy or sorrow. Pity or sympathy; sadness. Pain or grief. Fear or annoyance.

e. *Situations*

Mental suffering group: Death (14); seeing a dead friend; loss of husband; looking at dead son; aunt is dead; someone is lost (2); sick child; illness of relative; absence of child (2); conviction of friend; child being beaten; pleading with her son; bad news (2); some problem to solve; her child did something wrong.

Sympathy group: Watching a person or child suffering (6); looking at sick animal or child; someone is hurt; visiting a sick friend; sight of a ragged, or crippled, or sick child; a death; hears that her neighbor has broken her leg; hearing of an unfortunate accident; sorrowful sight (3); watching a widow walking up the street; sight of a poor beggar; watching a man being sent to jail; friend's tale of sorrow.

Resentment group: Child's misbehavior (5); her son has just smashed a plate; calling her little boy out of a mud puddle; "Keep off the grass!"; "Why did you do that?"; a person has done something not according to her method.

Disgust group: Child's action; child has disobeyed her; watches husband cooking.

14. POSED FOR DESPAIR

Number of analyzed returns: 320.

a. *Best Terms*

Mental suffering group: 140—44% (F 42%).

discomfort	1	calamity	1
disappointment	2	distress	9
discouragement	2	anguish	10
despondency	1	mental pain	12
sadness	1	despair	32
dejection	1	hopelessness	4
depression	1	helplessness	1
sorrow	14	semi-despair	1
worry	21	"tragic"	1
harassment	1	at a loss what to do	1
grief	19	crying	1
trouble	1	remorse	1

Fear group: 94—29% (F 31%).

anxiety	33	startle	3
apprehension	2	terror	4
fear	23	alarm	2
fright	7	consternation	3
dread	2	horror	13
scare	2		

Surprise group: 22—7% (F 8%).

wonder	2	astonishment	4
surprise	13	amazement	3

Perplexity-uncertainty groups: 21—6% (F 15%).

staggered	1	confounded	1
dazed	2	distraction	5
bewilderment	8	puzzlement	1
perplexity	2	incomprehension	1

Thought-attention-doubt groups: 18—5.5% (F 7%).

contemplation	1	trying to remember	1
meditation	2	attention	2
thought	4	interest	2
dreaming	3	doubt	1
revery	1	incredulity	1

Undifferentiated emotions: 7—2% (F 2%).

hysteria	2	excitement	4
delirium	1		

Miscellaneous: 16.

shock	11	repulsion	1
rage	1	considering an impossible	
vagueness	1	situation	1
suspense	1		

No replies: 2.

b. *Supplementing Adjectives*

Mental suffering group: Sorrow—sudden; deep (2). Worry—extreme; frenzied. Grief—true; apprehensive. Distress—reflective. Despair—hopeless; dazed.

Fear group: Fear—frantic.

Surprise group: Surprise—sudden (3); unpleasant (4); chagrined; painful; shocked.

Thought-attention-doubt group: Meditation—sad. Thought—deep. Attention—anxious. Doubt—hectic.

c. *Combinations*

Mental suffering group: Discomfort—with sorrow. Disappointment—with melancholy; distress. Sadness—with sorrow. Sorrow—with disappointment; depression and despair; anguish. Worry—with distraction; fear (2). Grief—with bewilderment and sudden shock. Trouble—with shock. Calamity—with shock. Distress—with indecision. Anguish—with mental suffering. Despair—with disappointment; helplessness (2); mental disturbance and hysteria.

Fear group: Anxiety—with mental suffering; dread; fear and consternation; brooding; indecision; disbelief. Fear—with anxiety; bewilderment; excite-

ment; reflection; distress. Fright—with worry; panic; surprise. Dread—with resignation. Scare—with distress. Startle—with blank; some hope. Surprise group: Surprise—with disappointment; incredulity and distress; horror; fear; and sorrow. Astonishment—with surprise; unbelief; puzzlement. Perplexity group: Dazed—with surprise. Bewilderment—with astonishment. Distraction—with worry (2). Miscellaneous: Shock—with anxiety; surprise. Vagueness—with giddiness. Repulsion—with anxiety. Rage—with nervousness.

d. Alternatives

Grief or distraction. Distress or sadness; shock. Distraction or anxiety. Fright or despair. Terror or mental quandary. Horror or surprise.

e. Situations

Mental suffering group: Death (5); death of child (6), of husband (4), in family (2), of loved one (4); bereavement; thought of dead friend; a loss (2); sick baby (2); husband injured; disastrous incident (2); accident to friend; to a member of the family; auto accident; child almost run over; something terrible has happened; a sad scene; after a great catastrophe; stock exchange break; loss of something and surprised at its loss; loss of money; bad (shocking, unhappy) news (10); poverty and drunken husband; fear of cancer, probably death; thinking of what is going to happen; failure (3); disillusioned; thwarted hopes; lack of satisfaction; about to get fired; up against it; caught at something wrong; inner battle with conscience; meeting of a big problem; recollection of event; something lost—a forgotten memory; fatigue; "fagged out"; tired out; does not know what to do (3) "What shall I do?" (9); "What is to become of us?"; "Why must this be?"; "Why did I do it?"; "Where can my beloved one be?"; "Where am I?"; wishes to be let alone.

Fear group: Death (2); relative killed or injured; death of a very close person, of someone beloved (2); sick child; accident (3); to child (2); lost child; something happened to relative; something about to happen; fearful sight; danger (2); some threatening evil; hears of train wreck in which husband is riding; man escaped from death by auto; house on fire; bad news (11); sudden accusation; sight of a ghost; realization of crime; has committed a bad deed (2); does not know what to do (2); "What shall I do?" (3); "What's coming next?"; "It can't be!"; "Do you think she will live?"; puzzling on the reality of the situation; has forgotten something; remains looking at scene.

Surprise group: Death of husband; accident to close relative; "I am hurt, struck upon the head"; bad news; trying to figure out what to do; reminded of something she should not have forgotten.

Perplexity-uncertainty groups: Death of child; lost jewels; bad (unexpected) news (2); lack of news of great import; does not know what to do; seeing no way out of dilemma; "What shall I do?"; sudden crisis, possible fire; in doubt in crisis; sudden statement; being questioned and disconcerted; "If I could only think!" "Let me think!"

Thought-attention-doubt groups: Deciding on a problem: "What shall I do?"; "What shall be done?"; answering a question; "Let me see!"; during an argument; interesting story; reviewing a past condition with regret; hearing of a hurt to a near one.

15. POSED FOR RAGE

Number of analyzed returns: 335.

a. *Best Terms*

Resentment-unwillingness groups: 159—48% (F 31%).

disagreement	1	indignation	4
disapproval	1	anger	82
displeasure	2	wrath	2
resentment	1	rage	53
shrewishness	1	temper	1
reproach	1	fury	2
accusation	1	denial	1
defiance	3	refutation	1
provoked	1	situation given only	1

Fear group: 57—17% (F 28%).

anxiety	1	terror	3
fear	9	dismay	2
fright	8	horror	34

Surprise group: 30—9% (F 7%).

wonder	14	astonishment	9
surprise	6	amazement	1

Physical states: 19—5.5% (F 5%).

pain	7	singing	2
weariness	1	calling	1
fatigue	1	shouting	1
yawning	6		

Disgust-dislike groups: 17—5% (F 8%).

disgust	10	nuisance	1
repugnance	1	hate	5

Scorn group: 15—4.5% (F 3%).

disdain	4	derision	3
scorn	6	mockery	1
contempt	1		

Strong undifferentiated emotions: 8—3% (F 2%).

passion	1	craziness	1
excitement	2	insanity	3
madness	1		

Emptiness group: 6—2% (F 5%).

ennui	2	boredom	4
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Miscellaneous: 16.

content	1	doubt	1
elation	1	incredulity	1
enthusiasm	1	concentration	1
worry	1	self-assertion	1
harassment	1	absurdity	1
pity	1	shock	5

No replies: 8.

b. *Supplementing Adjectives*

Resentment-unwillingness groups: Disagreement—extreme. Disapproval—sharp. Displeasure—violent. Anger—quick.
 Fear group: Fear—quick. Fright—extreme. Horror—somewhat belligerent; incredulous; shocking; assumed or interested.
 Surprise group: Surprise—extreme (2); disagreeable.
 Disgust-dislike groups: Disgust—low grade. Hate—reprimanding.
 Scorn group: Disdain—unbelieving.
 Undifferentiated emotions: Madness—caused by fear.
 Doubt group: Incredulity—scornful.

c. *Combinations*

Resentment-unwillingness groups: Reproach—with rebuke. Anger—with rage (3); scolding (5); reproach; fear (2); horror; amazement; active hate. Rage—with fright; alarm. Temper—with anger. Fury—with tantrum.
 Fear group: Fear—with surprise; worry. Horror—with fear (4); fright (3); anger.
 Surprise group: Surprise—with amazement; anger; horror; disbelief.
 Disgust-dislike groups: Disgust—with rage. Hate—with rage.
 Scorn group: Disdain—with contempt.
 Undifferentiated emotions: Excitement—with worry. Shock—with horror.
 Pleasure group: Enthusiasm—with ovation.

d. *Alternatives*

Anger or scowling; surprise. Horror or anger. Hate or violent anger. Shouting or singing.

e. *Situations*

Resentment-unwillingness groups: Argument (8); arguing with neighbor; quarrel (2); in trouble with someone; marital trouble; fighting husband or someone else; has found her husband with another woman; husband's conduct, family row; scolding the small boy; bawling someone out (3); giving vent to her feelings; calling to her child to do something; calling someone down; vehemently condemning; telling someone what she thinks of him; someone infuriated her; enraged by someone; insulted (3); deadly insult; being told she was crazy; being wronged (3); someone said something against her; hearing the neighbor say something false; being accused of something; unjust accusation; accused of a crime she has not committed; having been slapped on the face; jealousy has been aroused; calumny or scandalous statement; having heard a misstatement; neighbor throws trash in yard; seeing stolen apples; seeing her child putting his hand in fire; being kept from doing something; husband comes home drunk; deceived by one thought true; discovering that she has been cheated; personal annoyance; result of a continual annoyance; sudden unexpected distaste; disturbing scene; unwarranted cruelty; viewing an accident; fight—seeing a wolf; ready to battle; noisy violence; frustration.
 Fear group: Accident (5); fearful occurrence; sees the acrobat fall; sees husband murdered; personal participation in accident; unpleasant (horrible, terrifying) sight (4); hears surprising unpleasant information; danger approaching a loved one; impending disaster; some act of cruelty; someone did something disgraceful; calling to her child.
 Surprise group: Something unusual; hearing something out of the way (2); a scandal; a death; husband, long thought dead, returns.

Physical states: Personal injury; surgical pain; dental trouble; toothache (3); exophthalmic goiter; sleepy; taking a difficult note in singing.
 Disgust-dislike groups: Bothered about something; unwelcome situation; witnessing a person doing foolish things; being offended; confronted by an enemy; seeing someone she hates.
 Scorn group: Gossip; argument over back fence; calling at ball player she does not like; "You are a liar!"
 Strong undifferentiated emotions: Something disturbing her; frightful accident; her baby is dead; almost angry at some remark; her argumentative words were disregarded.
 Emptiness group: Sleepy (2); bed time; tired.
 Doubt group: Husband has lied.
 Mental suffering group: Exhorting a mob.

16. POSED FOR DISGUST

Number of analyzed returns: 409.

a. Best Terms

Disgust group: 230—56% (F 58%).

distaste	14	repugnance	6
disgust	200	repulsion	5
annoyance	5		

Scorn group: 64—15.5% (F 15%).

disdain	12	ridicule	1
scorn	17	sarcasm	1
contempt	14	cynicism	3
sneer	13	snobbishness	1
derision	2		

Resentment-unwillingness groups: 26—6.5% (F 7%).

disagreement	2	snarl	1
disapproval	3	anger	5
displeasure	6	unwillingness	2
pique	1	surliness	1
irritation	1	pouting	2
defiance	1	hurt feelings	1

Physical states: 22—5% (F 1%).

pain	20	squint	1
sniffing	1		

Dislike group: 18—4.5% (F 15%).

intolerance	1	hate	2
dislike	9	loathing	2
aversion	4	revenge	1

Mental suffering-sympathy groups: 15—3.5% (F 1%).

dissatisfaction	4	worry	6
depression	1	sympathy	1
sorrow	3		

Surprise-perplexity groups: 14—3.4% (F 0%).

wonder	1	perplexity	3
surprise	1	confusion	1
bewilderment	1	puzzlement	7

Thought-doubt groups: 6—1.5%.

calculation	1	skepticism	1
reflection	1	doubt	1
thought	1	disbelief	1

Miscellaneous: 11.

anxiety	1	boredom	1
fright	1	regret	1
unpleasantness	3	determination	1
discomfort	2	amusement	1

No replies: 3.

b. Supplementing Adjectives

Disgust group: Disgust—serious minded; intense; extreme (2); doubtful; disagreeable; foolish; worried; irritated (2); sneering (2); cynical; loathing. Repugnance—distasteful.

Scorn group: Contempt—ill-natured.

Resentment group: Displeasure—mild and sympathizing. Anger—mild; utter; disgusted; justified.

Surprise group: Surprise—half scornful.

c. Combinations

Disgust group: Disgust—with distaste and aversion; repulsion (3); disdain; scorn; sneer (2); contempt; disapproval; displeasure; anger; dislike; hatred; dissatisfaction; disappointment (2); general depression; horror. Annoyance—with irritation and disdain.

Scorn group: Disdain—with disgust; repugnance; scorn; sneer; disapproval. Scorn—with disgust (3); repugnance. Derision—with disbelief.

Resentment group: Disagreement—with hate. Disapproval—with disgust. Pique—with defiance. Snarl—with disgust. Anger—with disgust and sneer; hatred.

Dislike group: Intolerance—with disgust. Dislike—with disdain; aversion. Hate—with disgust.

Mental suffering group: Worry—with disappointment. Regret—with disgust.

d. Alternatives

Distaste or disbelief. Disgust or disdain; repulsion. Loathing or distaste or hate. Anxiety or pain.

e. Situations

Disgust group: Unpleasant odor (33)—handed bad fish by peddler; first time in autopsy room; smell of H_2S ; bad cheese; a dead mouse. Unpleasant taste, three-quarters bad food. Unpleasant sight (46)—repulsive scene; decayed body; squashed cat; filth; dirty object. Provoked by the action of others (79)—husband comes home drunk; husband tramps mud in; wishing her husband would stop drinking that liquor; hearing of a new dress her neighbor has bought; snubbed by an inferior; blackguarded by another woman; had been offered an unpleasant suggestion; watching a

man beat his horse; lewd conduct; obscene act; animal brutally killed; indecent action; bad sermon; inconvenience at being photographed.

Scorn group: Disbelief; unpleasant suggestion; insult, despicable sight; witnessing gross injustice; senseless and illogical statement; listening to repugnant story; disapproving of the situation; answering someone's opinion; "That's the type he is!"; "You are a fine specimen!"; objecting to a proposal; talking to unfriendly neighbor.

Resentment-unwillingness groups: Being neglected; distasteful food; unpleasant smell; a friend in distress; things not suiting ego; "Don't urge me!"; having been insulted.

Physical states: Pain (20)—stomachache (2); injury; toothache (2); examination of broken limb; some special visceral sensation; corn on foot; bad odor; bright sun in face.

Dislike group: Saucy words.

Mental suffering-sympathy groups: Something does not suit her fancy; response to unsavory remark; bad news.

Surprise-perplexity groups: Inability to understand (4).

17. POSED FOR SNEERING

Number of analyzed returns: 147.

a. Best Terms

Pride-scorn groups: 63—43% (F 79%).

superciliousness	1	sneer	9
insolence	1	leer	2
superiority	5	slander	1
disdain	6	snickering	1
scorn	14	sarcasm	5
contempt	15	cynicism	1
despise	1	snobbishness	1

Dislike-jealousy-meanness groups: 20—13.5% (F 9%).

dislike	3	ugliness	1
hate	6	malice	1
envy	1	maliciousness	1
jealousy	6	mischievousness	1

Disgust group: 11—7.5% (F 9%).

disgust	10	repugnance	1
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Self-consciousness-coyness groups: 9—6% (F 0%).

coquetry	1	embarrassment	1
flirtation	1	shyness	3
modesty	1	shame	1
self-consciousness	1		

Doubt group: 8—5.5% (F 0%).

doubt	2	distrust	1
suspicion	5		

Resentment group: 5—3.5% (F 0%).

disapproval	2	anger	1
insulting	1	sullenness	1

Pleasure-approval groups: 5—3.5% (F 0%).

content	1	pleasure	2
satisfaction	1	tolerance	1

Miscellaneous: 12.

wondering	1	emptiness	1
curiosity	3	tired	1
deceit	1	sadness	1
cattishness	2	pathologic appearance	1
disinterest	1		

No replies: 14.

b. Supplementing Adjectives

Pride-scorn groups: Disdain—good-natured. Sneer—cattish.

Dislike-jealousy-meanness groups: Hate—scornful. Envy—sneering. Ugliness—idiotic.

Disgust group: Disgust—contemptible.

Doubt group: Suspicion—jealous. Distrust—contemptive and sneering.

Resentment group: Disapproval—half-hearted. Anger—mild.

Miscellaneous: Curiosity—ignorant; half-hearted.

c. Combinations

Pride-scorn groups: Superiority—with disgust. Disdain—with scorn; jealousy. Leer—with contempt.

Doubt group: Suspicion—with disgust. Distrust—with disgust.

Resentment group: Disapproval—with disgust and scorn.

d. Alternatives

Scorn or disdain. Contempt or disdain. Hate or disdain. Disbelief or open suspicion. Modesty or embarrassment.

e. Situations

Pride-scorn groups: She does not agree with someone who thinks another person pretty; someone has done a thing she herself would never think of doing; witnessing a scene which she considers below her dignity; having been told something she did not like by someone she does not respect; having been flattered falsely; watching a despised rival: "The hussy!"; looking across the street at other girls: "I would not associate with them"; her child has done wrong; being told news of an enemy; "I should worry!"; trying to squelch someone; trying to "cat" someone; trying to get rise of a person: "You're not very nice!"; interviewing an inferior; "You're a fine person!"; "You think you are smart, don't you?"; "The brat!"; "I don't care for you!"; "I am better than you!"; "Where do you get that?"; "I don't think you can"; "What can you expect from her?"; "She did it"; "Well what do you think I am?"

Dislike-jealousy-meanness groups: Seeing her lover with another; he took the other girl: "I'll get her yet"; getting ahead of someone and yet eying them; seeing the neighbor's new automobile; "Oh, that does not compare with mine"; observation of an acquaintance as an act of revenge: "Just as I thought—a hussy!"; "How insolent you are!"; "I wish you wouldn't bother me!"; having been insulted; during a quarrel; attempting to frighten another: "Go away or I'll bite you!"

Disgust group: Watching an unpleasant situation; insulted by someone not so much inferior; hearing praise: "I can do better! I don't care."

Self-consciousness-coyness groups: Having been given a compliment: "You flatterer!"; in conversation with a man: "You nice thing!"; bad language used in her presence.

Doubt group: "What is he reaching for? What is he going to do again?"

Resentment group: Rightly called to order; "I won't have anything to do with you."

Attention group: Watching her neighbor eat: "I wonder how I should eat this salad."

18. POSED FOR CONTEMPT

Number of analyzed returns: 75.

a. Best Terms

Pride-scorn groups: 40—53% (F 77%).

haughtiness	1	despise	2
superciliousness	1	sneer	1
superiority	4	snubbing	1
disdain	12	sarcasm	1
scorn	12	cynicism	1
contempt	4		

Resentment-dislike-disgust groups: 12—16% (F 14%).

disapproval	1	jealousy	1
displeasure	1	disgust	6
dislike	1	repulsion	1
envy	1		

Pleasure-approval groups: 7—9% (F 0%).

pleasure	1	playfulness	1
happiness	1	love	1
joy	1	complacence	1
amusement	1		

Miscellaneous: 7.

doubt	2	attention	1
dissatisfaction	1	dreaming	1
cattishness	1	watching a child	1

No replies: 9.

b. Supplementing Adjectives

Pride-scorn groups: Superiority—sneering. Scorn—supercilious.

Resentment-dislike groups: Disapproval—supercilious. Dislike—impatient.

Pleasure group: Happiness—contented.

Miscellaneous: Attention—patronizing.

c. Combinations

None.

d. Alternatives

None.

e. *Situations*

Pride-scorn groups: "You think you are smart"; insulted: "I don't want to hear or see you again"; disapproves of another's dress; neighbor has green skirt on with yellow stockings; seeing her old rival with her suitor; seeing a woman come to tea and drink out of her saucer.

Resentment-dislike-disgust groups: Insulted by some inferior; on the street car next to a negro; "Her child is not nearly as good as mine."

Pleasure-approval groups: Listening to flattery; looking at her baby; thinking nothing at all.

Miscellaneous: Doubt: Questioning her lover. Attention: Patronizing—showing someone how little she thinks of her. Watching neighbor's child: "Mine are better than that child."

VIII. REPRODUCTION OF THE PHOTOGRAPHS



Modesty
1



Breathless Interest
2



Interest
3



Suspicion
4



Agreeable Surprise
5



Pity
6



Determination
7



Righteous Anger
8



Horror
9



Physical Suffering
10



Fear
11



Hate
12



Sympathy
13



Despair
14



Rage
15



Disgust
16



Sneer
17



Contempt
18

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